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ABSTRACT

This report examines how far Organisation for Economic Co-operation and Development (OECD) countries have come towards realizing equality between the sexes in education and the factors that facilitate or hinder progress in this regard. The report examines students in the formal education system of schools and colleges and reviews research findings on factors contributing to sex inequalities in education. The book is organized into two parts. Part 1 is titled "The Nature of Sex Differences in Learning and Education" and has three chapters. Chapter 1, "The Female Experience of Schools and Colleges: A Descriptive Overview," describes the strides made in higher levels of female enrollments and the inequalities that remain; chapter 2, "Sex Differences in Early Socialization and Upbringing and Their Consequences for Educational Choices and Outcomes," discusses traditional sex roles, how different socialization agents reinforce each other, and different ways in which schools and teachers contribute to this process; and chapter 3, "The Development of Sex Stereotyped Attitudes Among Boys and Girls: Different Models of Their Origins and Their Educational Implications," examines three models of the origins and development of sex differences in attitudes and educational attainment. Chapters 1 and 3 include extensive bibliographies. Part 2 of the report provides statistical evidence in the form of tables. (KWL)

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PARIS 1986

GIRLS AND WOMEN IN EDUCATION

A cross-national study of sex inequalities in upbringing and in schools and colleges

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

Pursuant to article 1 of the Convention signed in Paris on 14th December, 1960, and which came into force on 30th September, 1961, the Organisation for Economic Co-operation and Development (OECD) shall promote policies designed:

- to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the development of the world economy;
- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

The Signatories of the Convention on the OECD are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The following countries acceded subsequently to this Convention (the dates are those on which the instruments of accession were deposited): Japan (28th April, 1964), Finland (28th January, 1969), Australia (7th June, 1971) and New Zealand (29th May, 1973).

The Socialist Federal Republic of Yugoslavia takes part in certain work of the OECD (agreement of 28th October, 1961).

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Educational equality for women is an officially accepted objective throughout all OECD countries. Equal access to knowledge is an agreed right of modern societies. Equality between the sexes in education is regarded by many as essential to achieve greater equality in other economic, social and domestic spheres. This volume charts the progress towards educational equality in the schools and colleges of OECD countries. It finds many signs that progress has been made. But it demonstrates that serious inequalities between girls and boys and between men and women persist. A significant gap remains between the official objective and actual practice.

The present volume is divided into two Parts. Part One -- The Nature of Sex Differences in Learning and Education -- describes the current position of girls and women in OECD education systems, and the way that position has evolved over recent years, and reviews the literature on the manifold ways in which boys and girls are treated differently in their education and upbringing. Part Two -- The Statistical Evidence -- presents nationally representative statistics on a country-by-country basis, and maps in detail the distribution of educational opportunities between the sexes in the schools and colleges of OECD countries.

The responsible official for this volume is David Istance of the Education and Training Division in the Directorate for Social Affairs, Manpower and Education who is also the author of Chapter 1 and Part Two. The Report is published under the responsibility of the Secretary General.

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INTRODUCTION

The enquiry reported in this volume was carried out under the work programme of the OECD's Education Committee in a decade of intensive and growing activity, both national and international, in the field of women's questions. 1985 was the final year of the UN's International Decade for Women marked by the Nairobi conference in July. The EEC Ministers of Education met the month before to decide the best course to take for realising equal educational opportunities between boys and girls. The OECD published a review of progress towards equality between the sexes in all economic and social spheres, including education (The Integration of Women into the Economy, OECD, Paris, 1985).

The aim of this report is thus to clarify how far OECD countries have come towards realising equality between the sexes in education and the factors that facilitate or hinder progress in this regard. The focus is on pupils and students in the formal education system of schools and colleges. It is for this part of the total provision of education and training that nationally representative statistics are available on an OECD-wide basis and it is for these sectors of provision that the responsibilities of the educational authorities are most clear. The focus was chosen in order to complement, rather than to reproduce, other international enquiries. It does not concentrate, therefore, upon the different policy measures that have been enacted to promote sex equality in education and training, especially the training of women for non-traditional occupations, nor upon sex role stereotyping in school curricula and textbooks.

Chapter 1 -- The Female Experience of Schools and Colleges: A Descriptive Overview -- is based upon the statistics reported in Part Two as well as those contained in the OECD's education data bank. It shows the strides made in terms of higher levels of female enrolments throughout OECD education systems; it shows too how serious are the inequalities that remain. Chapter 2 -- "Sex Differences in Early Socialization and Upbringing and Their Consequences for Educational Choices and Outcomes" written by Constantina Safilios-Rothschild of the Population Council, New York City, United States -- shows how the traditional sex roles are engendered from the earliest years of infancy, how the different agents of socialization reinforce each other and it examines the different ways in which schools and teachers contribute to this process. Chapter 3 written by Judith Whyte of the Didsbury School of Education, Manchester, England, is entitled "The Development of Sex Stereotyped Attitudes among Boys and Girls: Different Models of their Origins

and their Educational Implications." Three models of the origins and development of sex differences in attitudes and educational attainments -- The Genetic Deficit model, the Cultural Differences model, and the Bicultural model -- are examined in depth. The literature reviewed in these two chapters is mainly of North American and British origin, though the findings and conclusions are relevant to all OECD countries. Both chapters include extensive bibliographies.

The tables presented in Part Two -- The Statistical Evidence -- cover all OECD countries except Iceland and they represent a unique source of up-to-date international data on the evolving position of girls and women in education systems over recent years. They are also rich in information for the reader interested in general educational developments.

Part One

THE NATURE OF SEX DIFFERENCES IN LEARNING AND EDUCATION

Chapter 1

THE FEMALE EXPERIENCE OF SCHOOLS AND COLLEGES: A DESCRIPTIVE OVERVIEW

INTRODUCTION

Two dominating characteristics of modern education systems in OECD countries form the subject of this introductory chapter: the very marked and near-universal growth of female enrolments in the main educational branches and sectors and the rigid division by gender that is still apparent in terms of school subjects studied and the tracks pursued post-school. The facts reviewed tell a story of rapid, sometimes remarkable, progress in some respects -- notable in education systems that are frequently accused of being impervious to change. Yet, in other respects, stubborn and crucial inequalities persist.

The focus is also deliberately descriptive, based upon the aggregate statistics of the OECD's own data bank and the national statistics compiled and presented in Part Two of this volume. It is a stock-taking of developments. The complex, overlapping factors that help explain these patterns and trends are taken up in the next two chapters.

This stocktaking is essential. Time and again, the demonstration of clear injustices with simple facts has proved sufficient to set in motion educational reforms. Stocktaking is necessary too because opinions differ markedly on precisely the question of what the facts, and their significance, are. Some assert that formal educational opportunities are now equal between the sexes and that recent years have witnessed the realisation of actual equality in terms of courses studied and qualifications obtained. Others take the opposite view, choosing to dismiss evidence of apparent progress as irrelevant beside the inequalities that remain, assuming the facts themselves to be established and well-known. Neither position is tenable. It is clear from the statistics that critical inequalities between boys and girls, women and men, exist. But it is also clear that the picture is far from a static one.

The existence and nature of change is underlined here for a further reason: they provide powerful support for the pursuit of the principle of equality of educational opportunity between the sexes. There is a widespread view that girls tend not to study the "male" school subjects or training courses because of an innate biological lack of the abilities applied in them. This view is widespread in the educational world at large, even if, for obvious reasons, scarcely at all among the community of interests committed to

improving the situation of women. Often implicit, rather than spelled out, it underlies what Judith Whyte describes in Chapter 3 as the "genetic deficit" model. She argues that the assumption of genetic inferiority cannot be dismissed as irrelevant as long as belief in it is a reality of educational practice. Instead, the assumption should be addressed and its inadequacies demonstrated. The facts of female progress in education help do this. It simply cannot be argued that the differences between the sexes in their educational experiences observed at any one given time are fixed by the limits of natural abilities when, over time and across countries, these experiences have changed significantly. Far from diluting the call for action and reform in favour of women, clarity concerning positive developments represents a potent argument in their favour.

EVIDENCE OF PROGRESS

In compulsory schooling, with 100 per cent official attendance, the only visible difference in **aggregate** enrolments between boys and girls is the slight imbalance in numbers that is the demographic quirk shared by all OECD countries (see Table A). Differences between the sexes in enrolments have been greatly equalised in the non-obligatory educational sectors. In practically none of the countries covered in Part Two below do brothers enjoy kindergarten and pre-schooling in greater numbers than their sisters. The numbers of female students in upper secondary education have increased throughout OECD countries and, as Table B shows, they have surpassed those of boys in many cases. The change has not been so advanced in the higher education sector, but, as the same table indicates, in many countries the balance of women to men in the total student population is much closer to numerical equality in the 1980s than the one-third share common even as recently as 1970. Examples such as the increase in the proportion of women studying in higher education in Norway from 28 per cent at the beginning of the 1970s to nearly 49 per cent in 1982, or from 26.7 per cent to 46.8 per cent in Spain over the same period, represent significant change even if such aggregates hide important inequalities between the sexes in terms of subjects studied and even if not all can boast changes on quite the scale of these particular countries.

Secondary and upper-secondary education

In the global terms of enrolment levels and qualifications obtained, girls often appear to achieve at higher levels than boys. In the few countries that retain selective secondary schools, with access determined by examinations or tests, girls have come to equal or slightly outnumber their male counterparts in these schools. Among school-leavers, it is now more common for boys than girls to leave the education system with no qualifications at all. 53.4 per cent of the unqualified school-leavers were boys in New Zealand in 1983 while this proportion is higher still at 58 per cent in the United Kingdom and it is over 60 per cent in Germany. An alternative indicator of the relative educational success enjoyed by girls and boys is the numbers who fall behind schedule in their scholastic careers in school systems that require the year to be repeated when attainment has been adjudged insufficient. France is one of the few countries that retains this

Table A

PERCENTAGE OF FEMALES AND MALES IN EACH 5-YEAR AGE GROUP FOR THE TOTAL POPULATION AGED 0-24: 1983

Country	0-4		5-9		10-14		15-19		20-24	
	F	M	F	M	F	M	F	M	F	M
	(%)		(%)		(%)		(%)		(%)	
Australia	48.7	51.3	48.8	51.2	49.0	51.0	48.9	51.1	49.3	50.7
Austria	48.9	51.1	48.9	51.1	48.9	51.1	49.1	50.9	49.7	50.3
Belgium(1982)	48.8	51.2	48.9	51.1	48.8	51.2	48.9	51.1	49.0	51.0
Canada	48.7	51.3	48.7	51.3	48.6	51.4	48.8	51.2	49.7	50.3
Denmark	49.1	50.9	49.0	51.0	48.9	51.1	48.7	51.3	48.9	51.1
Finland	48.8	51.2	48.7	51.3	48.9	51.1	49.1	50.9	48.9	51.1
France	48.8	51.2	48.8	51.2	48.9	51.1	48.9	51.1	49.2	50.8
Germany	48.8	51.2	48.9	51.1	48.8	51.2	48.5	51.5	48.5	51.5
Greece (1982)	48.3	51.7	48.2	51.8	48.5	51.5	48.4	51.6	48.7	51.3
Iceland	48.9	51.1	48.8	51.2	48.6	51.4	49.1	50.9	48.9	51.1
Ireland	48.8	51.2	48.8	51.2	48.7	51.3	48.8	51.2	49.1	50.9
Italy (1981)	48.7	51.0	48.7	51.3	48.7	51.3	48.8	51.2	49.0	51.0
Japan	48.8	51.2	48.7	51.3	48.7	51.3	48.8	51.2	49.1	50.9
Luxembourg (1982)	48.8	51.2	48.5	51.5	49.0	51.0	49.1	50.9	50.8	49.2
Netherlands	48.9	51.1	48.8	51.2	48.9	51.1	48.8	51.2	49.1	50.9
New Zealand	48.7	51.3	48.9	51.1	48.9	51.1	48.9	51.1	49.0	51.0
Norway	48.8	51.2	48.9	51.1	48.8	51.2	48.6	51.4	48.7	51.3
Portugal	47.6	52.4	47.9	52.1	47.7	52.3	47.0	53.0	49.0	51.0
Spain	48.5	51.5	48.3	51.7	48.3	51.7	48.9	51.1	49.4	50.6
Sweden	48.8	51.2	48.8	51.2	48.8	51.2	48.8	51.2	49.0	51.0
Switzerland	48.8	51.2	48.8	51.2	48.7	51.3	48.9	51.1	49.7	50.3
United Kingdom	48.7	51.3	48.6	51.4	48.7	51.3	48.6	51.4	49.4	50.6
United States	48.8	51.2	48.9	51.1	48.9	51.1	49.0	51.0	49.3	50.7

(F + M = 100 per cent)

Source: OECD Demographic Data supplied by national authorities.

system of redoublement and for which figures are available in this volume. By the last year of schooling (the "terminale" year), nearly a quarter of the boys in public schools are two years behind their fellows who have gone through their education without repeating a grade and 28.7 per cent of boys in the same final stage in private schools are equally far behind. With girls, the figures are lower especially in public schools -- the proportions are 15.7 and 22.4 per cent respectively.

Given that fewer girls leave the education system without any qualifications, and that fewer fall seriously behind with their school work, it is consistent that many continue their studies beyond the minimum

leaving-age and girls now comprise half or more of upper secondary students in many countries. (These include, from Table B, Austria, Belgium, Finland, Germany, Ireland, Japan, New Zealand, Norway, Spain, Sweden, and the United Kingdom). Other examples can be taken from the tables in Part Two that tell a very similar story. In Australia, for instance, boys clearly outnumbered girls in the final years of secondary schooling as recently as the beginning of the 1970s. Ten years later, the position had been completely reversed. By 1982, somewhat less than a third of the boys who began their secondary schooling several years before were still there in the final twelfth year compared with four out of every ten of the girls who had started at the same time.

One feature of this higher female share in upper secondary education is common to nearly all OECD countries -- enrolments in the general branches have increased and the numbers of young women in these branches have grown to such a degree that they are now equal with boys or even clearly surpass them. As seems to be the case in Australia, this may mean that more girls stay on in school while boys transfer to tertiary education. Or, the numerical equality or dominance of young women in the general sector of upper secondary education reveals the different choices made by boys and girls among the subjects and branches available in schools, sometimes within the same institution. The tables are replete with examples of the higher female enrolments in general education -- most marked in France and the Scandinavian countries. The female share of the general branches of upper secondary education stands at 63 per cent in Sweden, 61 per cent in both France and Finland, 58 per cent in Denmark (Table B) and 56 per cent in Norway). Other countries too are notable for the rapid growth of female enrolments and the speed of change in the balance of the sexes in these general branches in recent years -- Luxembourg, the Netherlands, Portugal, Spain, and Switzerland stand out in Table B in this regard. In practically none of the countries for which there are data are girls outnumbered by boys to any significant degree in the general streams at this level, the exception being Turkey. Even here, the female share has risen markedly over the 1970s and 1980s from 28.5 per cent in 1970 to 37 per cent in 1983.

Since these general streams are the ones that normally provide the qualifications necessary for entry to universities and other institutions of higher education, these developments represent an important advance towards educational equality between the sexes. Nevertheless, there are countervailing factors and the message of progress here has to be qualified by at least two less positive features. The first is that enrolments of girls in vocationally-oriented education and training still lag behind their participation in general programmes. The second, and possibly more serious, caveat is that subject choices are still markedly divided by gender and that the typically female tracks, in both the general and vocational sectors, tend to be precisely those that now suffer declining value in the job market.

These are indeed serious qualifications to the picture of rapid female advance in education but they should not be seen as cancelling out altogether the progress that the higher female enrolment levels in upper secondary programmes represents. For one thing, by no means all the vocational and technical courses where boys predominate are of value in the keen competition for jobs that follows education and training, especially when such professional preparation is short-term and in areas already over-subscribed. Thus, the fact that the ratio of boys to girls in the pre-vocational CPPN-CPA

Table B

PERCENTAGE OF FEMALE ENROLMENTS IN UPPER SECONDARY FURTHER AND HIGHER EDUCATION BY BRANCH: 1970, 1975, 1980, 1983

a) Upper Secondary Education.

Country and Branch of Education	1970	1975	1980	1983
Australia				
General	45.1(1)	48.4	52.1	-
Austria				
Total	50.3	50.4	51.2	52.1
General	46.6	48.2	47.6	47.7
Technical and Vocational	51.6	50.6	52.1	53.7
Belgium(2)				
Total	48.4	44.2	49.7	49.7
General	46.7	48.9	49.7(3)	50.5
Technical and Vocational	48.7	51.6	49.4(3)	48.2
Canada				
Total	49.0	49.7	50.0(3)	49.2
Denmark				
Total	-	41.2(4)	46.9	47.2(5)
General	-	54.3(4)	57.2	57.8(5)
Technical and Vocational	15.8(6)	21.2	40.8	41.1(5)
Finland				
Total	49.1(7)	53.3	54.3	56.0
General	57.4(7)	59.3	61.0	61.4
Technical and Vocational	42.4	46.5	46.9	50.7
France				
Total	50.0	52.1(8)	53.3(3)	51.6(5)
General	50.8	59.4(8)	62.1(3)	60.8(5)
Technical and Vocational	49.1	46.9(8)	47.1(3)	46.2(5)
Germany				
Total	48.4	50.0	51.7	52.1
General	44.8	47.8	50.8	50.8
Technical and Vocational	53.3	54.2	53.7	54.2
Greece(2)				
Total	41.7	42.2	45.6	-
General	47.7	49.3	49.7	-
Technical and Vocational	14.1	13.1	19.9	-

Table B (Continued)

Country and Branch of Education	1970	1975	1980	1983
Ireland				
Total	45.8	56.9	57.4	-
General	54.6	53.4	55.2	-
Technical and Vocational	38.5	82.9	71.6	-
Italy				
Total	41.6	44.4	48.5	-
General	43.2	47.1	50.9	-
Technical and Vocational	30.0	36.0	40.8	-
Japan				
Total	49.3	49.2	49.3	49.4
General	52.9	51.5	51.2	51.2
Technical and Vocational	44.1	45.5	45.3	45.1
Luxembourg				
Total	-	-	63.1	52.1(5)
General	42.5(7)	47.6	52.9	52.5(5)
Technical and Vocational	-	-	72.1	51.1(5)
Netherlands				
Total	42.8(7)	43.8	47.0	48.5
General	41.3(7)	45.4	49.5	51.5
Technical and Vocational	39.3(7)	34.9	41.1	44.1
New Zealand(2)				
Total	48.5	50.5	49.4	49.8(5)
General	-	50.2	49.1	49.6(5)
Technical and Vocational	-	92.6	81.6	86.0(5)
Norway				
Total	-	48.8	51.5	-
General	-	52.4	56.0	-
Technical and Vocational	45.7	44.1	46.9	-
Portugal				
Total	41.0	44.2	-	-
General	45.8	50.9	-	54.5
Technical and Vocational	35.7	37.0	-	-
Spain				
Total	33.3	46.1	49.3	-
General	41.5	48.5	53.5	-
Technical and Vocational	23.2	42.8	43.4	-
Sweden				
Total	54.4	53.3	55.5	55.8(5)
General	46.0	60.0	62.4	63.3(5)
Technical and Vocational	58.7	50.0	52.2	52.6(5)

Table B (Continued)

Country and Branch of Education	1970	1975	1980	1983
Switzerland				
Total	42.2(7)	48.9	55.9	56.7
General	38.6(7)	43.4	49.6	50.5
Technical and Vocational	31.3	47.9	63.2	63.4
Turkey (2)				
Total	29.4	36.4	32.5(3)	35.1
General	28.5	31.5	34.0(3)	37.1
Technical and Vocational	29.2	28.3	27.2(3)	28.1
United Kingdom				
Total	-	49.1	50.2	50.2(5)
General	-	48.6	49.4	49.6(5)
Technical and Vocational	45.7	54.1	49.4	54.5(5)
Yugoslavia (2)				
Total	45.0	46.9	47.0	47.5
General	46.4	48.1	47.6	48.0
Technical and Vocational	40.8	42.9	45.0	44.6
b) Higher Education	**1970 (9)**	**1975**	**1980**	**1983**
Australia				
Total	32.7	40.6	45.3	46.2
Non-university	38.8	55.4	58.8	55.5
University/Undergraduate	32.2	34.6	42.6	44.8
University/post-graduate	27.2	32.4	36.2	39.2
Austria				
Total	29.2	37.8	42.0	41.1
Non-University	65.3	70.3	75.4	69.6
University/undergraduate	26.8	33.6	39.8	41.7
University/post-graduate	-	-	18.9	25.3
Belgium				
Total	28.6	33.3	36.9	39.7
Non-University	48.1	50.3	61.2(3)	57.9
University/undergraduate	29.3	33.3	32.6(3)	-
Canada				
Total	37.4	42.8	50.1	51.0
Non-University	-	50.4(8)	50.9	51.2
University/undergraduate	41.4	44.7	51.5	52.3
University/post-graduate	23.4	28.8	37.2	40.2

Table B (Continued)

Country and Branch of Education	1970	1975	1980	1983
Denmark				
Total	36.7	44.3	48.9	48.9(5)
Non-University	51.7	54.4	75.7	70.7(5)
University/undergraduate	33.7	36.4	41.3	41.7(5)
Finland				
Total	48.4	49.8	48.2	47.7
Non-University	73.9	89.2	45.3	40.7
University/undergraduate	47.2	49.0	50.6	50.3
University/post-graduate	-	-	35.9	38.6(5)
France				
Total	-	57.1	48.4(10)	49.1(5)
Non-University	-	-	52.0(10)	50.3(5)
University/undergraduate	-	-	49.2(10)	50.6(5)
University/post-graduate	-	-	39.5(10)	39.2(5)
Germany				
Total	26.9	38.5	41.2	42.0(5)
Non-University	-	57.9	65.2	64.3(5)
University/undergraduate	-	33.9	36.8	38.2(5)
University/post-graduate	-	21.9	28.7	31.5(5)
Greece				
Total	31.9	36.8	41.5	-
Non-University	53.8	33.3	39.2	-
University/undergraduate	31.6	37.4	42.4	-
Ireland				
Total	-	34.3	40.6	-
Non-University	-	24.3	36.1	-
University/undergraduate	-	40.5	42.8	-
University/post-graduate	-	42.5	43.8	-
Japan				
Total	28.2	32.6	33.7	34.5
Non-University	65.4	80.5	83.6	84.8
University/undergraduate	19.7	22.6	23.3	24.0
University/post-graduate	9.2	9.4	11.6	12.9
Luxembourg				
Total	37.5	44.5	35.0	35.0
Non-University	47.8	44.5	32.2	32.5
Netherlands				
Total	27.7	32.6	39.7	41.9(5)
Non-University	34.4	38.1	46.0	47.9(5)
University/post-graduate	20.7	25.0	30.9	33.2(5)

Table B (Continued)

Country and Branch of Education	1970	1975	1980	1983
New Zealand				
Total	39.2	37.5	47.3	41.7
Non-University	67.2	35.3	39.1	38.6
University/undergraduate	34.8	40.7	42.8	45.6
University/post-graduate	23.2	27.9	32.1	37.8
Norway				
Total	28.1	37.7	47.8	48.8(5)
Non-University	37.8	43.8	56.4	-
University/undergraduate	41.0	47.3	54.0	-
University/post-graduate	19.5	25.3	31.0	-
Portugal				
Total	44.4	45.0	48.3	-
Non-University	-	69.7	86.1	-
University/undergraduate	-	42.9	44.9	-
University/post-graduate	-	12.4	38.2	-
Spain				
Total	26.7	36.2	43.9	46.8(5)
Non-University	28.9(6)	36.9	47.8	54.3(5)
University/undergraduate	28.2	36.0	42.5	44.0(5)
Sweden				
Total	42.4	44.9(8)	46.2(10)	-
Non-University	78.6	39.6(8)	-	-
University/undergraduate	37.6	44.7(8)	-	-
University/post-graduate	30.1	25.1(8)	-	-
Switzerland				
Total	22.5	26.8	30.3	32.8
Non-University	-	25.7(8)	26.0	28.5
University/undergraduate	-	27.9(8)	33.5	36.0
University/post-graduate	-	-	22.3	25.7
Turkey				
Total	18.9	16.4	26.0	33.7
Non-University	-	10.2	23.8	31.0
University/undergraduate	-	20.6	26.2	34.0
University/post-graduate	-	-	-	34.0
United Kingdom				
Total	-		36.4	-
Non-University	39.9	4	29.0	-
University/undergraduate	28.4	34.	41.1	-
University/post-graduate	20.1	24.0	30.8	-

Table B (Continued)

Country and Branch of Education	1970	1975	1980	1983
United States				
Total	41.3	45.0	51.4	-
Non-University	41.7	45.5	54.8	-
University/undergraduate	43.7	45.8	50.6	-
University/post-graduate	32.7	40.7	44.0	-
Yugoslavia				
Total	39.4	39.9	45.4	44.9
Non-University	40.8	38.9	43.7	43.0
University/undergraduate	38.8	40.3	45.9	45.4

Note: All figures refer to public and private provision. Upper-secondary enrolments refer to full-time students only. Higher education enrolments refer to full-time and part-time students.

1. 1972
2. All Secondary Education
3. 1979
4. 1977
5. 1982
6. 1972
7. 1971
8. 1976
9. Except for total enrolments in higher education, figures refer to 1971
10. 1981

Source: OECD Education data bank, figures supplied by national authorities.

programmes in France is now approaching two-thirds to a third may as much indicate male "failure" as it does female exclusion. In contrast, young women made up 54.5 per cent of the high level technician courses (STS) in 1982-83.

Nor should the degree to which **aggregate** female enrolments lag behind in vocational programmes at this level be exaggerated. There are many signs here too that the position of young women has improved in recent years and a number of examples from Table B, such as Ireland, New Zealand, and Switzerland, show that in some cases girls even outnumber boys in these programmes. One or two of the most extreme examples from Table B may owe something to revisions in official classifications but even taking countries where the measured progression has been steadier, the increase in the proportion of young women among the students in these vocational lines has sometimes been a marked one (for example, Denmark: 15.8 per cent in 1972 rising to 41.1 per cent a decade later; Spain: less than a quarter at the beginning of the 1970s yet 43.4 per cent at the decade's close). In certain other countries, the increased share of young women in these programmes is apparent even if on a less dramatic scale, while they remain a distinct minority in some. The Greek figure of less than one girl in five among the

technical and vocational students at the upper secondary level is exceptionally low.

Some account should be taken of the perceived value of the qualifications and diplomas obtained at this level and the influence this has upon educational decisions. It is possible that general education diplomas have a different labour market value for young women and young men. In Scotland, it was found that boys who stayed on at school, but who did not continue on to further or higher education, gained no advantage on entry to the job market, compared to those who left at the end of compulsory schooling. If anything, it reduced their chances of getting jobs. The opposite was true for girls (1). In other words, in a youth labour market segregated by sex, women's jobs often call for other secondary qualifications such as the baccalaureat or the GCE "A" Level whereas male jobs seem to require either no qualifications or else further training outside schools or a higher education degree. At one extreme, then, the growth of female enrolments in upper secondary education, and in the general branches particularly, can be seen as a manifestation of the highly segregated labour market. But upper secondary diplomas can also be seen in the short-term as valuable protection against unemployment for girls at a time when jobs are scarce in a manner that is less available or not possible for boys. That more girls stay on in school and that it genuinely improves their employment chances is good; that it might reinforce educational and labour market segregation clearly is not.

Given the increased aggregate female enrolments at this level of education, it is not surprising that more young women study mathematics and sciences. This too should be seen as progress even if the increases can often be described as little more than modest. But change has occurred sufficiently that girls are now a slight majority among the students following the higher mathematics Intermediate Certificate course in Ireland while they comprised 48 per cent of the School Certificate passes in mathematics in New Zealand in 1983-84. At the upper secondary level about half of the young women in the Gymnasium in Denmark are now in the mathematics classes, compared to only a third in 1970 and in the United Kingdom, the proportion of girls studying for GCE "A" Levels in purely non-scientific courses fell from 64 per cent in the mid-1970's to 53.4 per cent in 1984. This progress is, at best, limited since the proportion of boys studying purely arts and humanities courses at "A" Level also fell (signifying the growing attractiveness of the sciences rather than a significant redistribution between the sexes). Equally, the proportion of male students in the alternative to the upper secondary mathematics line in Denmark -- languages -- had slumped to a mere 16 per cent by 1983.

Further and higher education

The position of young women in further and higher education and the way that this has changed over recent years follow very similar patterns to those in upper secondary education in terms of the overall growth of enrolments, that even attain numerical equality with men in some cases. This co-exists with persisting marked differences between the sexes in the subjects studied. The actual enrolment levels of female students and their share of the different programmes tend to be lower than in the upper secondary sector of provision and for the most advanced courses at the post-graduate level, the norm remains that women are easily outnumbered by men. Nevertheless, the

scale and rapidity of increase in the female higher education population is significant and universal. There are also signs that certain prestigious university programmes, with clear professional relevance, have opened their doors substantially to women.

The enrolment figures contained in Table B summarise these main patterns. In universities (at undergraduate level), women are now half or more of the students in Canada, Finland, France, Norway, and the United States(in this case, see Part Two). Elsewhere, they are in the minority. Yet their minority status in undergraduate programmes was much more marked even as recently as the beginning of the 1970s than it is now ten to fifteen years later. For example, women were less than a third of undergraduates in Australia in 1971 and they were not much more than a quarter in Austria in the same year. In both, their share had risen so that over four women in every ten students at this level were women by 1983 -- in these two countries, 45 per cent and 41 per cent respectively. The growth of higher education students and the place of women in that growth in Spain is one of the most remarkable examples of expansion among OECD countries. Some 28 per cent of undergraduates in 1971, women were 44 per cent of these students eleven years later. The increase in Ireland (see Part Two) from less than 30 per cent in 1970 to 48.4 per cent by 1984 is no less impressive. Other countries provide examples of an evolving student profile in the direction of more equal balance between the sexes, even if rather less dramatic ones than in cases like Spain and Ireland. The female proportion of students is commonly between 40 and 45 per cent.

Not all countries, however, admit women to first degree university programmes on this scale. The minority status of the female undergraduate is still pronounced in several OECD countries -- most notably, Japan, the Netherlands, and Turkey.

Summarizing developments across OECD countries for the non-university sector is a hazardous task given the wide range of courses and establishments, serving an equally wide range of purposes, covered by this sector. The proportion of women students in non-university higher education varies considerably from one institution to the next, and also from one country to another. Table B gives some indication of this. In certain countries -- Austria, Belgium, Denmark, Germany, Japan, Portugal, United States -- women clearly predominate in these programmes, in some cases making up three-quarters or more of the non-university student body. (The same applies in New Zealand (Part Two). Yet, in other countries the opposite is true. Less than a third of non-university students are women in Luxembourg, Switzerland, Turkey, and the United Kingdom.

Not all countries are identical concerning the gender composition of part-time students. In Canada and the Netherlands, the pattern is clearly one of women outnumbering men among part-time students. The figures for the United Kingdom tell the opposite story. In part, these contrasts reflect real differences in the importance of part-time study overall in each education system, and the degree to which it is a mode of attendance used by women to enable access to higher education that otherwise would be very difficult or impossible (2). In part, these differences are an artifact of the kind of programmes covered in the relevant tables in Part Two.

In general,the access of women to post-graduate programmes still lags well behind that of men, as Table B shows. There are, as with the other types of courses discussed above, examples of significantly rising proportions of women among the students in masters and doctoral programmes and there are countries where female post-graduate enrolments have reached approximately 40 per cent (Australia, Canada, Finland, France). Exceptionally, in Ireland women follow programmes at this level in equal numbers to men and the same applies in the case of masters degrees awarded in the United States (while the proportion of female doctorate and professional degree award winners still remains low). But the general pattern is one of women remaining seriously behind in access to post-graduate courses.

Fundamental divisions by gender are apparent along the classic lines of women following courses in the humanities, arts, languages with men predominant in the applied sciences. Yet, some changes have occurred, among the most interesting examples of which are to be found in disciplines that do not belong to either polarity of the male/female subject spectrum. In many OECD countries, for instance, women are as well represented among the students of the prestigious medical faculties as they are in the university student body as a whole. In one or two countries, these faculties have become, if anything, "feminine" ones; most notably, in Finland and Yugoslavia where women are, respectively, 57 and 59 per cent of medical students. Significant increases in the same statistic to 42 per cent in Australia, 45 per cent in Austria, 44 per cent in Spain, 41 per cent in Luxembourg, and 48 per cent in the United Kingdom (undergraduate studies of medicine, dentistry, and health) are but examples that are repeated in many other cases.

Medicine, while prestigious, is not a typical "male" faculty since it has strong associations with supposedly feminine characteristics such as nurturing. There are other disciplines where women have made significant inroads in recent years that are, perhaps, still more indicative of change since they have traditionally been male-dominated subjects. These include law and architecture and, in some countries, courses in business management, commerce, and administration. Less than one student in ten among the 116 000 who gained a bachelor degree in business and administration in the United States was a woman in 1971. In only a decade, this proportion had risen to 36.7 per cent of the 200 000 bachelor awards in these subjects. At the masters level, the increase was equally marked. While the total of masters degrees awarded to both men and women in business and management approximately doubled over the ten year period, the proportion of women successful in these degrees rose from 3.9 to 25 per cent. A further example is furnished by university students in business administration, social and behavioural science, and law in Norway. Less than three in ten of these were women in the mid-1970s. The relevant percentage figure stood at 44 by 1982.

It should again be emphasized that these are only examples, though the trend towards higher female enrolment levels in administration, commerce, and business together with a more even male/female balance is discernible in these subjects in many countries. Perhaps unsurprisingly, the trend is least apparent where female university enrolments remain low. Questions remain, of course: how useful are degrees and diplomas in these subjects in the subsequent search for jobs? How diverse are the actual courses covered by these broad headings? The answers vary widely to each question. It is important to note, however, that a growing number of women in further and higher education have departed from the most traditional path of an education

in the arts, humanities, languages, or education. More study in areas that have a clearly defined professional relevance. Not all such courses are valued in the labour market, but many are.

Examination even of the most solidly male bastions -- engineering and the applied sciences -- provide too some evidence of progress. Developments in these faculties in the North American countries of Canada and the United States show that some change has occurred, albeit very partial change. A mere 1.5 per cent of successful Canadian bachelor candidates in engineering were women at the beginning of the 1970s. By 1982, the share had grown to 9.1 per cent. This represents an approximate eleven-fold increase in actual numbers. The growth in numbers is still more dramatic in the United States -- over nineteen-fold. Despite this growth, only one engineeering student in ten is a woman in these countries. Engineering is still a male bastion.

GIRLS AND WOMEN REMAIN SERIOUSLY DISADVANTAGED IN EDUCATION

Fewer girls than boys "fail" in education but, equally, fewer attain the highest levels -- for instance, the most prestigious academic streams, the top scholarships, or postgraduate degrees. School subjects and faculty programmes remain sharply divided by sex; in some, a boy is a rarity, in certain others few women are found. We saw that some of the overall increase in female participation in education has meant that growing numbers of women pursue the traditionally male subjects. But it has also had the result, in many instances, of even greater female predominance in subjects where girls and women are already over-subscribed -- the growing **feminisation** of these subjects, as it has been called. These are worrying developments especially because the feminized faculties tend to be those where subsequent job opportunities have been badly affected by labour market recession (3). The programmes of vocational education and training are often the most rigidly divided by gender, rendering still more imposing the task of eliminating employment and occupational segregation (4). And the technical fields and applied sciences, often highly valued in labour market terms, are, despite modest changes, male bastions.

Lower female enrolments in the most prestigious courses

The persisting male advantage in the most prestigious courses is shown in several of the tables in Part Two. Girls outnumber boys at most school qualification levels in New Zealand but they are still only one-fifth of the small élite group of university scholarship award winners. Though in the majority among baccalaureat and university undergraduate students overall, women still comprise less than a third of those preparing for the most prestigious form of higher education in France -- the Grandes Ecoles. And no more than 37 per cent of the young scholars attaining the highly valued baccalaureat C (mathematics and physical sciences) were women in 1983, a pattern repeated more strongly still in Switzerland for the sought-after "C" maturité diploma there. Young women were no more than a fifth of the students preparing for this line.

These illustrative examples are important in understanding the barriers to the achievement of full equality between the sexes in education. To take the French case, mathematics,(and the "C" baccalaureat in particular), have become increasingly sought-after for the added competitive advantage that they give in terms of future educational and job careers (5). The languages and letters baccalaureat are devalued comparatively. The fact that the most valued courses and qualifications, as they change over time, remain male domains means that the increased female participation in them may well be only enough to ensure that the position of young women has not actually deteriorated. Educational advantage is thus a moving target and as girls and women cross one barrier in the direction of greater equality, the "rules of the game" change such that new barriers emerge. Whereas previously, for instance, a university degree by itself would have been sufficient to ensure reasonable future prospects, these prospects are now more dependent upon the kind of degree attained and the faculty that has issued it. The extent to which greater equality of opportunity between the sexes is realised cannot be comprehensively ascertained, therefore, simply by comparing the balance of boys and girls in a given educational programme now and previously.

The patterns of enrolments broadly described in the previous section add up, even with the progress made by women, to a substantial male advantage. Despite the ample proof of the capability of women to profit from a college education in equal numbers to men, demonstrated by their achievements at the upper secondary level, the female/male ratio of enrolments tends to follow a recurrent and familiar pattern in higher education. The ratio is generally highest in the non-university programmes of further education, dropping for university undergraduate courses, falling still more for masters degrees, and is low for doctoral and professional diplomas. Among postgraduates, the norm is for three-quarters or more to be men and there are certain countries where the male share is significantly higher still.

The curriculum, subject choice, and the feminisation process

That certain principal school subjects and higher education programmes are predominantly male or predominantly female is evidenced repeatedly in the tables of Part Two. In schools, this is seen in such figures as the 95.8 and 96.6 percentages of boys studying for woodwork and metalwork respectively at Intermediate Certificate level in Ireland, or the even greater predominance of New Zealand boys in these subjects among successful School Certificate candidates. At the upper secondary level, two illustrative examples are provided by technical students in Portugal where girls are outnumbered twenty to one, or in the French "mathematics and technical sciences" baccalaureat where over 95 per cent of the successful candidates in 1983 were young men. There is, of course, nothing peculiar to Ireland and New Zealand, France and Portugal, in this; the patterns are typical of the entire range of OECD countries.

The same comparisons can be made for "female" subjects. Comparable to the technical fields and woodwork and metalwork for boys, domestic science is almost exclusively followed by girls. Certain other subjects, closer to the core of the academic curriculum, have also become "girls'" subjects with the passage of time. This is true across OECD countries as a whole and at all levels once specialisation begins. We have already seen that only 16 per cent

of the male Gymnasium students in the upper secondary school in Denmark follow the languages, as opposed to the mathematics line, and this is a further drop from the already low 25 per cent at the beginning of the 1970s. It is illustrative of the "feminization" of faculties referred to above, of programmes where girls and women are already over-subscribed becoming with time still more exclusively female. One of the most popular of the upper-secondary baccalaureat programmes, to use again a French example, is the one offering philosophy and letters (baccalaureat "A") where girls were some 72 per cent of successful candidates in 1972. Their dominance of this humanities diploma had risen again by 1983 -- four successful candidates out of every five were young women. During the same period, scarcely more than one-third of the valued baccalaureat "C" passes(mathematics and physical sciences) were by girls and no improvements in this respect were made between the mid-1970s and 1983.

Some softening of the male/female divide is apparent in the Swedish upper secondary three and four-year programmes -- a mere 7.6 per cent of female take-up of technical courses in the mid-1970s had improved so that at least one student in five were young women by 1983-84. This does not represent radical change, to be sure, but it is a small step towards more even gender representation throughout the school curriculum. The slight fall in the predominance of girls in the humanities line in Sweden between 1980 and 1983 is too small, however, to represent evidence of change at all. Already 80 per cent of students on these courses in 1975, the female share rose further still to 85.6 per cent by 1980 and stood almost as high -- 84.3 per cent -- in 1983-84. (The lack of boys in the languages programmes is still more marked in Italy at this level of education at one student only out of every ten).

The rigid gender divisions are, if anything, more striking in the vocationally-oriented fields and sectors of provision. One way that this can be illustrated is to examine the ratios of men to women in different vocational subjects at a given level of education and to compare the number of options where the ratios lie within the 40 to 60 per cent range with the options where the balance of the sexes is more skewed. The large majority of the relevant courses and programmes fail this test of relatively even balance of the sexes. The only programme where such a balance is attained among the many offered by medium and higher level technical and secondary schools in Austria in the early 1980s was tourism. It is also in tourism that relatively equal numbers of female and male students are to be found in equivalent Turkish schools (39:61 female/male ratio). Otherwise, in none is there relatively equal numbers of women and men using the 40-60 per cent criterion. Swiss, Japanese, Swedish, and Norwegian data on the number of courses enjoying a balance within this range of two-fifths to three-fifths males or females tell a very similar story. In Switzerland (1982-83), two out of twelve programmes met this criterion in upper secondary vocational education and the equivalent figures were one course in seven for Japan (1983), three courses in sixteen in Sweden (1983), and one in seven in Norway (1982). Looking at the Norwegian case in more detail, easily the largest of the vocational programmes at the upper secondary level are the "clerical and commercial" and the "manual and industrial" lines. Nearly 70 per cent of trainees in the former were girls in 1982 while they comprised a mere 15 per cent of the industrial course.

The data compiled and presented in this volume refer to the formal school and college systems where nationally representative statistics are available across the range of OECD countries. In labour market and enterprise training, that are outside the scope of this report, the rigid division by sex remains an outstanding problem. Germany, perhaps more than any other Member country of the OECD, is where the apprenticeship system is most integrated into the overall provision of education and training for young people and some figures on apprentices are included in Part Two. They show that even in Germany, where the apprenticeship system is developed well beyond narrow preparation in male craft and industrial occupations, the division by gender is a sharp one. This is most apparent in the "male" fields: in all of the eight most popular occupational training sectors for young men that are covered in the relevant statistical table, at least nine out of every ten trainees is male. In five of these, only one out of every hundred is a girl.

As with lower and upper secondary education, the statistical tables in Part Two are replete with examples of "male" and "female" faculties in further and higher education. Highly skewed access to subjects and options that are only taught at these levels occurs just as it does with other programmes, such as languages or sciences, that are a continuation of school studies. A good example is teacher-training and education that typically are predominantly female. In some cases, educational institutions are, or have become, overwhelmingly male or female. An example of this is provided by higher education in Japan. Here, women are less than a quarter of the university undergraduates but are nine out of every ten junior college students.

In the previous section we saw that the faculties of engineering and applied sciences, despite some signs of progress, remain male bastions. In some countries, the ratio of women to men is now as "high" as one woman in ten in these faculties and, exceptionally, higher still. But in others, there is no more than one woman in every twenty engineering students. In this section, reference has been made to the process of feminization of faculties such as the humanities, languages, and education. It requires attention no less than the more widely-discussed problem of increasing the numbers of girls and women in technical subjects. Canadian examples illustrate the feminization process. Only just over half the undergraduates in the education faculties were female at the beginning of the 1970s but by 1982, women made up over seven in ten of these students. Women were less than half of the humanities undergraduates in 1970 but were 62 per cent of these students by 1982. And the female share of both the arts and the health professions faculties remained high throughout the 1970s and 1980s (65 per cent and 65.8 per cent respectively in 1982). Less than 45 per cent of letters students were female in Luxembourg at the beginning of the 1970s but this share had risen sharply to nearly 60 per cent by 1982 and the comparable statistics for France were 64.4 per cent (1970) and 67.8 per cent (1982). Women were half of the humanities students in Norway in the mid-1970s but this had risen sharply to 61 per cent by 1982. The same figures in Australian universities were 58.8 per cent (1976) and 65 per cent (1983). Further examples are provided by the paramedical and health fields.

Examination of the balance of the sexes in the different programmes and institutions of higher education, reveals therefore crucial aspects of female disadvantage. This disadvantage is reinforced by the changing status and position of the faculties that have large numbers of women students. At

present, the subjects pursued by a high and rising proportion of women are those most at risk of devaluation, in both educational and labour market terms. Conversely, the subjects in which women are still few in number often have high employment value and less vulnerable academic standing. This concern has been spelled out in detail in an OECD report on policies for higher education:

> "Of particular interest in the present discussion is the situation of those university programmes which have traditionally had a high academic ranking and prestige but which, under the combined effects of massive expansion, the declining employment value of their degrees, and consequent changes in student choices, risk becoming increasingly unattractive options. The situation of such university programmes -- more often found in the field of the humanities, social science and pure science -- becomes even more critical when in addition to the problems created by lack of employment outlets, they constitute the main or only open access sector of higher education and are thus perceived both as "high risk" options and as "safety valves" for the overall system. In addition, the trend among senior academic staff members to neglect or abandon undergraduate programmes coupled with the increasing difficulty of teaching a highly heterogeneous student body -- in terms of motivation, ability, socio-demographic characteristics -- render the task of maintaining high academic standards increasingly difficult. (The danger is) that once certain disciplines or university programmes are deemed to have low employment value they risk being further downgraded by a diminution of their academic standing." (6)

The obstacles to equal opportunities between the sexes revealed by this general analysis are clear. Precisely those courses or programmes in which women are concentrated are those singled out above as at risk of suffering downgrading in terms of academic standing and resources.

Educational disadvantage and social disadvantage

This chapter has emphasized the degree to which positive developments have occurred alongside the persistence of problems and obstacles to educational equality between the sexes. Yet, much of the progress that has been realised has been concentrated among those from privileged social strata. A student who is both female and of working-class origin, on the other hand, faces a double educational handicap.

A small number of examples among higher education students illustrate this dual handicap. A Norwegian study summarizes it thus:

> Both during transition from compulsory school and schools for secondary education as well as between matriculation exam and further education, girls are taking less advantage of their educational opportunities than boys. This tendency is much more significant in the lowest socio-economic groups. (7)

In contrast to girls in higher social groups, reports a Swedish study, "the daughters of working-class parents have been almost totally unable to achieve a place in the male-dominated, high-prestige programmes" (8). The

difference in the gap between men and women from different social backgrounds who have attended university in Australia confirms the same picture. About 30 per cent of sons of professionals study at university compared with about a quarter of daughters of comparable social milieux. The sons of semi- and unskilled workers are well behind their more privileged fellows -- only 5 per cent have studied at this level, a sixth of the rate for professional's sons. But for girls, the divergence of rates of university attendance is considerably wider since only 2 per cent of the daughters of semi- and unskilled workers have managed to reach this level in the education system (9).

This chapter has provided an overview of the changing position of girls and women in the schools and colleges of OECD countries based on enrolments data that give statistical breakdowns by sex. This has necessarily concentrated the focus upon the upper stages of schooling and upon further and higher education. Many of the inequalities between the sexes visible in these levels of education, however, have their roots much earlier in the educational career of the student and even pre-school in the form of different patterns of early socialization, different for boys and girls and for contrasting social and cultural milieux. Many of the factors that lie behind these educational inequalities are profound and are reproduced in the institutions and structures of society. Within this array of social structures, the school's role is critical, both as a source of inequality and as a place where directed change can and should occur. These more profound factors, and the school's role within them, are taken up and examined in detail in the next two chapters.

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Chapter 2

SEX DIFFERENCES IN EARLY SOCIALISATION AND UPBRINGING AND THEIR CONSEQUENCES FOR EDUCATIONAL CHOICES AND OUTCOMES

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THE FIRST YEARS OF LIFE AND SOCIALISATION IN SEX ROLES

From the moment a child is born, its gender stimulates the parents to start acting according to the projected future roles of the child on the basis of sex and the stereotypically appropriate attributes and skills associated with these roles. This projection into future sex role tracks permeates, as we shall see, every gesture, thought, and expectation of the parent for the child, and creates the climate for teaching sex roles. In one experimental study in which mothers were asked to play with a six month-old boy, the child was presented to some of them dressed as a boy and to others dressed as a girl. Their reaction varied according to the perceived gender of the child rather than its behaviour. They smiled more and handed the child a doll when they thought it was a girl, they more often handed it a train when they thought it was a boy. Some of the mothers went so far as to attribute "feminine" characteristics to the male child when they thought it was a girl. But it is interesting to note that mothers were not aware of how they behaved differently according to the child's perceived gender (Will, 1976. Similar results have been obtained since, see Rave and Hannah, 1984.)

During the first three months of life, mothers and fathers tend to vocalize -- to speak, sing, or "baby talk" by repeating the child's nonsense noises and syllables -- much more often in response to daughters than to sons (Lewis, 1972a; Moss, 1967; Lewis and Freedle, 1972; Rebelsky and Hanks, 1971). Mothers of three month-old boys, more often than those of three month-old girls, hold, touch, and rock their infants as well as help them to a sitting or standing position that requires them to support their own weight (Lewis, 1972a; Moss, 1967). In general, during the first three months of life, mothers physically stimulate male children more than female children, handle them roughly, pull their arms vigorously (Moss, 1967; Yarrow, 1971) and try to keep them more active than girls (Moss, 1967). The sex role stereotypes of parents are reinforced by visible sex differences in body build since at birth boys tend to have greater size and weight as well as more muscle mass than girls (Bardwick, 1971; Harris, 1976). Parents faced with a big, strong, baby boy feel free to handle him roughly. Faced, on the other hand, with a small, light-weight baby girl with few muscles, they feel

justified in treating her as a fragile being, to protect her and to be concerned about her safety and well-being.

The pattern established very early of a high degree of vocalization with infant girls may at least partially explain their earlier development of verbal ability due to the stimulation of the left hemisphere of the brain. Conversely, the greater strength and physical ability of boys is clearly fostered and encouraged by parents.

After the first three months of life some important changes take place. Fathers no longer talk to their daughters more than to their sons, though mothers continue to do so (Rebelsky and Hanks, 1971). But since mothers spend much more time with infants than fathers do, girls continue to be talked to more than boys and their verbal ability is further enhanced. By the sixth month, mothers also reverse their behaviour and begin to touch (though not roughly) girls more than boys (Goldberg and Lewis, 1969). More generally, when children are about six months old there are some indications that mothers not only tend to diminish the physically close and affectionate relationship with boys, but also actively encourage them to develop interests in the surrounding objects and to explore the environment on their own. In one observation study, for instance, mothers started holding their six month-old boys so that they faced away while the mothers continued to hold girls turned towards them and close to them (Lewis, 1972b). Mothers maintain the physically close and affectionate relationship with daughters for a longer time, usually during the first two years (Lewis, 1972b; Goldberg and Lewis, 1969). Girls, therefore, do not experience the same degree of psychological "distance" from their mothers as boys do. This distance can be seen to facilitate the child's autonomy as well as the development of higher cognitive functioning, such as representational thought (Sigel, 1968).

In addition to girls being talked to more and receiving more affection, touching, and physical proximity than boys, they are also more protected by both parents. From the age of the child of about nine months, fathers are more often concerned about the safety and well-being of their daughters than of their sons (Pedersen and Robson, 1969) and in one study where the children were 27 months old, mothers were more worried about potential physical dangers to daugthers than to sons (Minton, 1971). Partly because of this perceived fragility of girls, fathers get into rough-and-tumble play much more often with their sons than with their daughters. The perception of girls as fragile and weak is based not only on their physiology but on preconceived ideas of what a girl **ought** to be. When the female infant develops physically in ways that are contrary to these preconceived ideas, parents still rely heavily on their preconceptions. While girls are, on the average, smaller and weigh less than boys, their physical development is faster in terms of bone ossification and dental maturity, and they generally mature earlier, physiologically and neurologically (Harris, 1976). Parents, however, tend not to accord any special importance to these less visible cues of maturity and hence of the capacity of girls to withstand as much physical roughness as boys (Harris, 1976). They continue to protect girls, to "baby" them, to handle them with care. They restrict and supervise them.

Although the findings on this subject are fragmentary, they suggest that already during the first year of life in many families the pattern is established: girls are viewed by both parents as fragile little things that must be handled with care, protected, kissed, held, and loved. In this way

they are given a headstart toward helplessness, passivity, dependence and diffidence. Boys, on the other hand, are viewed as strong children who enjoy and need activity and rough games and who must be sent off early on their own to explore their surroundings. Thus, the stage is set for the autonomy, independence, activity and self-confidence that boys more typically enjoy. The stage is set, it should be underlined, on the basis of the child's gender rather than on other personal needs and abilities.

PRE-SCHOOL CHILDREN

As children grow older, the differences in behaviour towards sons and daughters by parents tend to increase, partly because sex-appropriate characteristics become more relevant at a later age (Kagan and Moss, 1962; Block, 1975) and partly because interactions between children and parents are mutually reinforcing. Already at pre-school age, there is evidence of greater consistency and more clear-cut differences in parental behaviour on the basis of the child's sex, suggesting that by this stage parents have started more actively to shape their children differentially as boys and as girls.

The labelling of children as boys or as girls

Parents define children as **boys** or **girls** and continuously validate and underline the social and psychological significance of these general labels by the dress of their children, by giving them sex-typed toys, and, even more importantly, by discouraging behaviour that is regarded as inappropriate, especially in their sons. It is predominantly by means of this labelling by parents that children come to define themselves firmly as biological males or females by the age of three. This label then becomes a crucial filter through which stimuli and experiences are perceived and evaluated (Block, 1975). By the age of three, boys and girls not only are certain of their own gender and that of others but also are aware of the existing cultural sex-typing (Thompson, 1975).

Knowing that he is a boy, because his parents define him and treat him as such, a male child goes on to learn from television advertisements, cartoons, and programmes, and from books, the things that boys do that he can imitate and the things girls do that he must avoid. It has even been found that the more a boy is sure of his gender identity and its constancy over time and across situations, the more he prefers to watch male heroes on film and television. The corresponding trend is, however, weaker for girls, most probably because they have already become aware of the inferior female status and are likely to identify with both heroines and with powerful heroes (Slaby and Frey, 1975). Parents help children organise and give meaning to all socialisation experiences in terms of gender, therefore, so that children eventually attach a whole set of sex-appropriate beliefs and behaviours to their identity as boys or girls.

Girls receive more warmth and affection

Although the evidence is far from complete, there are some indications that both fathers and mothers have a warmer and more physically close relationship throughout childhood with their daughters than with their sons (Hetherington and Frankie, 1967; Crandall et al., 1964). This trend continues after children go to school and throughout adolescence, although fathers with adolescent daughters tend to become somewhat inhibited in terms of physical closeness (Radin, 1973; Laosa and Brophy, 1972; Maccoby and Jacklin, 1974). Daughters not only receive more affection and support from both parents but also are more protected, "babied", and less punished, especially physically, by both parents (Maccoby and Jacklin, 1974). Thus, the affection and support that girls receive from their parents is not cooled off by punishment in the same way that it is with boys, and this is probably the reason why girls perceive that their parents love them and support them more than boys do, regardless of how it is viewed by parents or observers.

Higher achievement expectations for sons

Both parents have higher achievement standards and expectations for their sons (Maccoby and Jacklin, 1974). Fathers are concerned with the performance of their sons, and they pressure them more than daughters toward cognitive achievement. When fathers teach daughters a task or a skill, they try to make the situation more fun and hence cushion the stress from possible failure to learn (Block, Block, and Harrington, 1974). Mothers, who frequently reward efforts to achievement, tend to be less affectionate toward their sons of pre-school age and less apt to reward behaviour that exhibits dependence than is the case with daughters of the same age (Crandall, Preston, and Rabson, 1960). It seems, therefore, that mothers have a more balanced affective approach towards their sons than towards their daughters since they show them affection but they also tend to maintain a certain distance from them, while still expecting them to achieve at a high level (Hoffman, 1972). Left to try on their own and to complete tasks and activities successfully, boys are encouraged toward autonomy and independence. Girls, because they tend to receive consistent love and approval from their parents without the pressure of high achievement expectations and criticism about their performance, tend to have low aspirations and achievement motivation. And when a more balanced relationship is struck between mothers and daughters in terms of love/approval and criticism/achievement expectations, it has been found to be associated with high educational aspirations and achievement (Hermans et al., 1972; Lipman-Blumen, 1972; Lozoff, 1973). Moderately warm and relatively detached mothers leave enough space for daughters to develop competence, independence and high achievement motivation (Stein and Bailey, 1973; Baumrind, 1971).

An important mechanism that promotes achievement in boys, but that also creates anxiety, is that parental love and approval become, or are seen to become, conditional upon their having solved problems correctly or performed tasks well. Boys thus come to feel anxious and concerned about their performance since much more depends on it than simply getting the job done well. For girls, love is not made conditional upon performance and success although it is not entirely unconditional. Girls feel less the onus to succeed (Hoffman, 1972), but they feel pressure to be "feminine". Parental love and approval is sought by the display of the "feminine" qualities of

sweetness, neatness, obedience, passiveness, dependence, nurturance, affection, as well as achievement in domestic tasks and responsibilities. Girls are required to be obedient, conforming and neat, and are more restricted in their activities (Baumrind and Black, 1967; Hatfield, et al., 1968). They are placed in a cocoon of maternal love within which they are taught dependence through help and overprotection that encourage passivity and "femininity" rather than competitiveness and achievement (Stein and Bailey, 1973).

The role of the father has not been as well investigated. There is some evidence that when girls are relatively distant from their mothers and closer to their fathers, they tend to be better problem-solvers, more field-independent and interested and competent in "masculine" achievement areas. Concomitantly, boys whose fathers are unusually close to them tend to lose their advantage over girls or even to become comparatively less competent in terms of problem-solving and field independence, when they are compared with girls whose mothers are relatively detached (Lynn, 1969). ("Field independent" means being able to rely more on themselves and hence less on their environment.) Furthermore, girls high in analytical ability were found to admire and identify with their fathers who perceived intelligence, energy, and talent in their daughters and encouraged them to use these traits and to develop competencies regardless of sex-role stereotypes. This did not alter the recognition and appreciation of their femininity by their fathers (Lozoff, 1973). These findings are indeed important because they clearly underline the crucial role played by the parental relationships with sons and dauthers in the development of competence and achievement and are thus highly relevant to later education outcomes. The relative lack of studies of fathers and their role should, therefore, be rectified.

Boys are encouraged toward independence

The findings discussed above take on greater significance when seen within the context of parental fostering of independence in children since independence is significantly related to achievement. The evidence in this area shows little consistency, partly because of the variety of dimensions involved in the concepts of dependence and independence. But there is some cross-national evidence that indicates that both parents, and especially fathers, emphasize independence in their sons more than in their daughters in that they encourage them to take chances and to assume personal responsibility (Block, 1975). Independence in girls is often more restricted through supervision, mainly out of fear that harm may come to them. This vulnerable image is based partly on the stereotyped notion of "feminine" fragility and partly it derives from the possibility that a girl might become pregnant.

Girls also have less chance to develop independence in the sense of acquiring the ability to tolerate ambiguity and frustration, to face and to tackle on their own difficult tasks and problems, and to explore possible solutions. Mothers tend to over-help daughters, responding more quickly and frequently to requests for help from their daughters than from their sons (Osofsky and O'Connell, 1972; Hoffman, 1972). In this regard it is important to note than it has been found that when parents give children general directions for performing tasks rather than helping them in specific cases, and permit them to explore and perform on their own, high achievement motivation is enhanced (Hermans et al., 1972). While parents behave towards

boys in ways that enhance their achievement, they tend to help girls with specific tasks and to interfere with their performance rather than give them general directions and leave them to master things on their own. Girls, therefore, learn dependence upon adults -- first their mothers, then their teachers and, later on, their boyfriends and husband -- rather than self-reliance.

An observational study of the interaction between parents and daughters of pre-school age who were performing different tasks showed that both mothers and fathers interact more with dependent than with independent daughters and that fathers accept and encourage dependency more than mothers do. It must be noted, however, that the expression of dependency towards each parent is different. When it is directed to fathers, it is more action-oriented in the sense that attention, reassurance, or help is sought by the daughters. When it is directed towards the mother, the daughter is more psychologically clinging and seeks to be near her (Osofsky and O'Connell, 1972).

In general, we can conclude that independence is encouraged more in sons by both parents in terms of taking chances, assuming personal responsibility and coping with difficult tasks and problems. They protect, supervise, help, and encourage dependency in daughters who, consequently, have less chance to learn to stand on their own and become responsible for themselves.

Boys and aggressiveness -- ambiguous messages

Fathers tend to expect more aggressiveness and competitive behaviour from their sons than from their daughters, but are more tolerant of anger and aggression when they come from their daughters rather than from their sons (Block, 1975; Block, 1973; Lambert et al., 1971). It might be said that they accept that their sons will be more aggressive but then they try to channel it into competitiveness and achievement. Probably because they feel that they have to curb their sons' aggression, fathers are more authoritarian towards them than towards their daughters. With boys, they tend to be firmer and to punish them physically (Block, 1975; Maccoby and Jacklin, 1974). That boys receive more frequent physical punishment and other negative sanctions from their parents, especially from fathers, may discourage psychological dependency. Thus, by gaining a certain distance from their parents, they acquire greater independence and autonomy (Block, 1975; Maccoby and Jacklin, 1974).

SCHOOL-AGE CHILDREN AND ADOLESCENTS

General patterns of socialisation

Although the evidence on older school-age children is more disparate, it suggests that many of the aspects of parental behaviour discussed in detail in the previous section become sharper and more accentuated. The pattern, for example, of warmth, nurturance and acceptance towards girls becomes more clear-cut after the age of nine years. After this age, both parents consistently accept, love and support their daughters more than their sons (Block, 1975). Again, support and acceptance of daughters tends not to be

mitigated by punishment. School-age boys are "toughened" for the masculine role through the more frequent use by both parents of punishment, including physical punishment.

Concerning autonomy, problem-solving, and achievement, the earlier patterns become more entrenched. Mothers with ten year-old daughters have been observed to intrude with help, suggestions, and criticisms in their efforts to solve problems and carry out tasks more than with sons and this affects mathematical and spatial ability. When mothers leave the girls to solve problems themselves, they tend to do better in mathematics and to learn how to rely on themselves rather than on others (Bing, 1963). It has also been found that both parents expect boys more than girls to take college-preparatory lines in high school and to continue on to college (Hilton and Berglund, 1971). One exception comes from a black sample in which mothers were concerned more with the intellectual achievement of girls and had higher expectations and academic standards for them than for their sons (Buck and Austrin, 1971). (Ethnic differences are discussed in more detail below). But generally, parents continue, and indeed intensify, their differential treatment of boys and girls, motivating sons toward higher achievement and daughters toward nurturance and femininity. Much more research is needed, however, into the behaviour of parents toward girls and boys of school age and especially during adolescence, when many crucial gender issues are raised with particular sharpness.

Social and cultural differences in socialisation for sex roles

A. Social class

There has been relatively little research concerning the role that social class plays in sex role socialisation. This is due, at least in part, to the fact that social class is not usually a salient variable for psychologists and social psychologists who are those who most often conduct these studies. In addition, observation studies, which yield some of the most interesting data on these questions, are time-consuming and expensive and are usually carried out on small samples usually of upper-middle and middle-class subjects (Safilios-Rothschild et al., 1977a). We know little about how working-class parents behave towards their daughters and sons and in what ways this differs from upper-middle and middle-class families. Studies conducted in the United States in the 1970s indicate that lower status parents tend to accept the traditional sex roles more than higher status parents (Thompson, 1975) and that lower class fathers are less nurturant than middle-class fathers and, hence, more constrained by masculine sex stereotypes (Radin, 1972).

There is some evidence, however, that some important changes may have been taking place that account for less sex stereotypic views and behaviours in this stratum of society, especially among women (Glazer-Malbin, 1973; Holstrom and Bernard, 1975). Furthermore, the dynamics of social class cannot be understood only in terms of the education and occupation of the father. Increasingly, the contribution of the social status characteristics of the mother -- such as her working status or level of education and/or type of occupation -- to class differentials has been studied. Thus, the mother's educational level and occupational status are equally, if not more, relevant to the fundamental sex role conceptions of girls than are those of the father (Meier, 1972; Knaub, 1976).

It is important to note additionally that there is evidence that women who choose non-traditional occupations tend to come from more privileged families (Safilios-Rothschild et al., 1977b) and to have highly educated fathers (David, 1971) or mothers (Karman, 1973). Due to a more traditional upbringing regarding sex roles among working-class girls, some studies report that the degree of sex-typing is greater among these girls than those of more comfortable milieux and that this difference is less pronounced for boys (Nadelman, 1974). The achievement of girls of low socio-economic status seems to be less affected by "fear of success", however, than in the case of middle and upper-middle class girls. Thus, in Horner's study, 78 per cent of the 59 girls who scored high on "fear of success" came from middle and upper-middle class homes and had predominantly successful business or professional fathers, while two-thirds of the thirty-one subjects who scored low came from lower-middle and working-class homes (Horner, 1972). A replication of Horner's study, with a high proportion of women from lower-middle class families, reported a lower percentage of women responding with fear of success stories -- 48 per cent instead of 65 per cent in Horner's original study (Robbins and Robbins, 1973). It is possible that women from less privileged backgrounds, who may well be the first in their families to go to college, are highly selected in that they are especially talented and determined. They would thus be highly motivated to succeed. They may feel more comfortable with the idea of success because it means a lot to them and to their families and because they have had to undergo financial struggles to achieve it. Intelligence or scholastic ability have not been controlled for in these studies, however, and so it is hard to assess the precise relationship between social class and achievement motivation.

It should be noted that socio-economic status is an extremely important factor in determining the chances of girls to graduate from high school and, even more, their likelihood of college attendance and graduation. When the economic resources of the parents are limited, they tend to be used for the education of the boys while the girls are expected to get a job (Safilios-Rothschild, 1971). Economic scarcity tends to define college education for girls as a luxury that parents are not willing to indulge (Alexander and Eckland, 1974).

B. Ethnic and social class differences

Black children in all social classes in the United States experience different sex role socialisation from whites. A number of studies in the 1970s have indicated that black mothers were more concerned with the intellectual achievements and had higher educational and occupational expectations for their daughters than for their sons and they were more inclined to make sacrifices in order to send girls to school so that their daughters would not have to repeat their own life experiences (Weston and Mednick, 1970; Buck and Austrin, 1971; Scanzoni, 1975; Thompson, 1974; Brook et al., 1974). Although these differences were found in all social classes, some evidence suggests that higher status black parents have greater educational and occupational aspirations than lower status black parents for both boys and girls (Brook et al., 1974).

Little is known about how black parents differentially prepare their children in sex roles. One small study of low income black mothers gives us some insight by reporting that they tended to expect their daughers to become

independent in some ways, such as by taking care of themselves, earlier than they expected their sons to do so (Glazer-Malbin, 1973).

These different expectations affect the perceptions black girls and boys have of themselves and of each other and have important consequences for achievement. There is considerable evidence that the self-concept black women hold tends to be more positive than that of white women. Among whites, girls evaluate boys more positively than other girls, while black girls view men as unreliable and evaluate black women as positively overall as black men (Turner and Turner, 1974a). Starting with adolescence, black girls judge themselves as favourably as black boys do of themselves, in contrast to the less favourable self-image that becomes increasingly apparent as white girls grow older. This difference is consistent across all social classes. Furthermore, black adolescent girls are less concerned than white girls about how much they are liked by others, especially boys, and are more likely to see themselves as well-liked by boys. Partly because black girls are not as anxious about their popularity among boys, they tend to be less self-conscious and less self-deprecating -- they care less than white adolescent girls do about how good-looking they are and are more satisfied on average with their looks (Simmons and Rosenberg, 1975). They are less likely to suppress their intelligence and achievements or to modify their personality to please boys (Turner and Turner, 1974b). Fewer black than white adolescent girls are preoccupied with marriage (Simmons and Rosenberg, 1975) and, probably even more important, black girls have tended, in contrast to white girls, to view marriage and motherhood as compatible with work so that their self-concept is based as much (or more) on scholastic achievement it is on popularity.

Given these findings, it is not surprising to find that middle-class and lower-class black college students do not show "fear of success" in response to hypothetical stories of women achieving to the same degree as in the reactions elicited from white students of similar background. White women see the loss of friends, social rejection (especially by men), guilt feelings, and despair or doubts about normality or femininity as the penalizing consequences of high achievement and success. Black women are more likely to view success for a woman as a positive factor, an indicator of her usefulness economically and as a way to increase her attractiveness to men rather than threatening to male egos (Weston and Mednick, 1970; Mednick, 1973). Among Blacks, at least up to the late 1970s, women may have been free from "fear of success" partly because they perceived men as approving of their achievement and partly because few black men competed with black women in the high prestige occupations described in the stories to which the women were responding (Mednick, 1973). But since black men are now increasingly entering high prestige professional, business, and administrative fields, it remains to be seen whether middle-class black women will now start to show more "fear of success" or whether the ideology of Women's Liberation and the earlier female models will counterbalance the anxiety of competing with black men.

THE ROLE OF SCHOOLS AND TEACHERS IN SEX ROLE SOCIALISATION

By the time children start kindergarten or the first grade, there are already differences between girls and boys in their behaviour and attitudes but many of these are still tentative and uncrystallised. Despite the

different treatment of boys and girls by their parents, children (particularly girls) still offer considerable resistance to the restriction of their behaviour and personalities within the narrow confines of what is considered appropriately "masculine" and "feminine". Some patterns have already been set but even these could probably still be reversed, if their experiences from six years onwards did not further reinforce and amplify these patterns (Hough, 1985). Television programmes and advertisements, story books, and toys have also made stereotypical imprints on children, but again these imprints are not necessarily deep and permanent at this age. Probably they could be erased, if schools did not continue to reinforce the same type of sex role indoctrination and with an authority that makes the imprints more or less indelible.

Traditional behaviour in girls rewarded at school

There is some evidence that both male and female elementary school teachers prefer pupils who are passive, co-operative, quiet, and conforming, over pupils who are independent, assertive and active (Feshbach, 1969; Good and Grouwns, 1972). Teachers value these more docile features because they desire a smoothly functioning classroom with fewer problems (Lee, 1973a). Sex-typed girls tend to be the "teachers pets". Data from Switzerland confirm the finding that teachers prefer girl pupils, especially middle-class girls, because they are more attentive, more conscientious, better organised, more punctual, cleaner, more timid and less talkative than boys (Haefeli, 1977).

It has been usually assumed that the preference of teachers for acquiescent behaviour is detrimental to boys rather than girls. The proof for this has been seen to lie in the tendency for boys to have inferior grades and poorer scholastic aptitudes and adjustment than girls. Girls, according to American and Swedish evidence, seem to like school better (Helin, 1974; Svensson, 1971; Husèn et al., 1973); to get better grades most of the time and to show fewer learning and behavioural problems (Good et al., 1972; Caplan and Kinsbourne, 1974; Nord-Larsen and Wedel-Petersen, 1976).

For many years, few asked whether girls too suffer negative effects from the fact that both teachers and parents reward conformity and acquiescence. Yet, girls are less well equipped than boys to withstand the pressures and requirements of school because of their earlier socialisation experiences at home. Girls tend to please teachers more than boys do because they do what teachers tell them and are rewarded by good grades. But what do grades mean and what does this process do to female personality development and growth, their ability to learn, their achievement motivation, their autonomy and their long-term functioning as adults? Recently, researchers in the United States, England and Sweden have pointed out that rewarding feminine sex-typed behaviour in schools is helpful to the short-term scholastic success of girls but is quite disfunctional to their long-term ability to learn, their intellectual development, and eventual adult competence (Lee, 1973b; Sadker and Sadker, 1972; Clarricoates, 1978; Wernersson, 1982, Whyte, 1983).

Girls are conditioned to feel that pleasing the teacher and getting good grades are the important goals in school and that learning per se is of a secondary order. In some cases at least, girls may get to the point that they study and try to do well in school **in order to please the teacher** rather than because they are interested in the subject matter or because they want to be promoted to the higher grade. Even competition with fellow students may be

sometimes transposed from the scholastic to the affective in the form of striving against others for the approval and/or preferential treatment by the teacher. Girls do, of course, learn in the process, but learning is not necessarily the primary preoccupationn and in this case they **do not learn how to learn**. Furthermore, the approval-oriented motivation for learning does not prepare them well for achievement later on. They do well in school to the extent that they are approved and rewarded. But later, in school and in work, the high achievers will not necessarily be those who are liked or rewarded, as a study of successful women found (Hoffman, 1972). On the other hand, boys who resist institutional rules and school requirements risk losing the approval of their teacher but are better able to discover their competencies; more often than girls they try to influence what happens in the classroom, and they acquire more confidence in their own ability than girls (Ekholm, 1971; Sysiharju, 1972; French and French, 1984). In this way, their motivation to learn comes from themselves and they are freer to explore and to learn not only the school lesson but also, more basic to their intellectual development, they learn how to learn for themselves (Smith, 1972).

Although little research has focused on this question, it is reasonable to assume that girls will be in a better position to develop their autonomy, independence, and critical faculties if their teachers maintain a relative distance and allow them more space to grow. Furthermore, girls who reject the institutional compliance rules and are naughty, make noise, and disrupt the class and who are, in consequence, often disapproved of and punished by the teacher may also be more able to escape the "over-socialisation" process of the teacher and learn to develop on their own rather than only perform well on assigned tasks (Smith, 1972). Research in this area would help clarify these issues.

Teachers treat girls differently from boys

When asked, teachers in both Europe and the United States are not usually aware of the fact that they treat and respond to boys and girls in different ways nor are they aware of the consequences of their behaviour for the indoctrination of sex roles (Donovan, 1973; Serbin, 1972; Safilios-Rothschild, 1979b; Spender, 1982). That is why videotapes of teacher-student interactions provide both the best information of what goes on in classrooms and the best materials for helping teachers become aware of the part they play in reinforcing sex roles. The available observation studies in pre-schools and primary school classrooms consistently show that teachers treat girls differently from boys in ways consistent with those shown by parents toward sons and daughters.

When boys are aggressive or disruptive, teachers tend to react immediately and forcefully, but they do not when girls are disruptive. This difference in the behaviour of pre-school teachers holds true as well when teachers' reactions to attention-seeking by boys and girls are examined. They receive equal attention when they are very close to the teacher but boys receive encouragement and attention even when they are out of reach but engaged in appropriate independent activity. Furthermore, the response of teachers to solicitation for attention or help is different. To boys, teachers give more directional and instructional responses. In this way, girls are encouraged to stay near the teacher and under the surveillance of physical contact, nodding praise, eye contact and direct help since the

receipt of attention is conditional on their proximity to the teacher. Female autonomous learning and curiosity may thus be stifled by teachers through girls being helped rather than being given directions "how to..." and by being prevented from exploring because they are "bribed" by the teacher's nurturance of passive, dependent behaviour. Boys, on the other hand, are encouraged not only to be autonomous but even aggressive, venturesome, and self-reliant (Serbin, et al., 1973).

Teachers spend more time interacting with boys than with girls (Etaugh and Huges, 1975; Leinhardt, et al., 1977; Kilborn, 1976; Wernersson, 1982; French and French, 1984). Teachers tend both to praise and to criticize boys more frequently than girls. For example, boys are more often asked direct questions by the teacher, they are more frequently praised when they give correct answers and more frequently criticized for incorrect answers or failure to respond (Brophy and Good, 1970; Sikes, 1971; Felsenthal, 1970a; Serbin, et al., 1973). In their behaviour, therefore, teachers show that they have higher expectations of boys and they place greater pressure for achievement upon boys than upon girls (Safilios-Rothschild, 1979a).

In Sweden and England, it has been found that because boys have more teacher attention than girls, that they in part have elicited, this attention makes them feel that their actions have consequences as well as actually facilitating their learning. Since teachers interact more with boys, they get to know them better as individuals and teachers tend, therefore, to give boys more individualised instruction than is true for girls who more often remain among the better-behaved "crowd" (Wernersson, 1982; Spender, 1982).

Detailed observation of the criticisms and praises directed by teachers towards boys and girls has shown that of the many criticisms directed towards boys, only one-third were related to the intellectual quality of their work, as opposed to the two-thirds of the negative evaluations addressed to girls. With expressions of praise, 94 per cent of those addressed to boys, but only 79 per cent for girls, dealt with the intellectual quality of their work. In addition, teachers attributed poor academic performance to lack of motivation eight times more often in the case of boys. The impact of this sex differentiated behaviour of teachers is that the use of negative evaluation for boys becomes indiscriminate since it is employed more often for non-academic matters, while for girls, it remains more salient since it is frequently related to the quality of their work. Given that the academic shortcomings of boys, more than girls, are blamed on lack of motivation and, hence, insufficient application to study and that they are more often praised than girls for good academic performance, these factors lead boys to treat the criticism of teachers as ambiguous and an invalid assessment of their level of ability (Cairns, 1970; Eisenberger et al., 1974; Callaghan and Manstead, 1983). Even when in one grade they do not do very well, if in the next they have a new teacher or different subjects, they may try anew and possibly excel, being less affected by previous negative evaluations of their work. Since the inadequacies of girls are attributed in lesser degree to lack of motivation or inadequate study, and they more frequently receive criticisms that refer directly to the poor quality of their work, girls cannot disregard negative evaluations as ambiguous or invalid. Even when the teacher or the subject change, they are more likely to be still affected by criticisms received earlier by teachers, and this develops low achievement expectations (Dweck, et al., 1975).

With the expectations of teachers higher for boys, their differential treatment of boys and girls varies according to their actual levels of scholastic achievement (see Brophy and Good, 1970; Felsenthal, 1970b; Good et al., 1973). Boys who do well in school tend to be the "teacher's pets" more even than the high-achieving girls. They get attention and support from the teacher while being criticized for slip-ups. Boys who do not do well at school, however, are at the bottom of the teacher's preferences. Not only are they seen as having failed scholastically but because boys are expected to succeed, this failure is "sex-inappropriate". Girls who are not good students, on the other hand, often fare better than boys with the same low level of achievement. Teachers will still like them if they are "nice", "sweet", and "quiet". Their femininity thus cushions the hardships of scholastic failure (Good, et al., 1973).

These findings are significant and disturbing. Girls often receive too much approval by their teachers, approval which may be as much conditional upon their willingness to be nice as upon their scholastic achievement. This parallels and reinforces the same pattern that is experienced with parents and conveys the message that achievement is of secondary importance in their lives, especially for those who are not high achievers. In this way, girls also learn from an early age that failure to achieve does not necessarily have to cost them rejection, rather perhaps only the expression of mild disappointment on the part of parents and teachers. When they do not succeed in school or in other tasks and settings, they learn that they have a way out -- they can always be passive and dependent.

The question arises: what happens to the boys who do not do well in school? Since they have failed to live up to the expectations of high achievement and leadership expected of boys, they are faced with a number of alternatives that can reassure them and those around that they can live up to norms of masculinity, in this case in some way other than scholastic achievement. Competitive sports provide a good example; they represent approved and encouraged masculine activities and many boys find them an attractive alternative that enhances their self-image as well as their standing among peers and adults, even their teachers. Not everyone can excel in competitive sports, however, and having to face failure in another field of achievement can be destructive. Some boys thus take easier and more negative paths in an effort to prove that they are appropriately male. They may become the troublemakers who disrupt the classroom and who again manage, therefore, to attract the attention of their teachers, this time in order to be reprimanded or punished (Brophy and Good, 1970; Martin, 1970; Whyte, 1984). Others go yet further towards delinquency. All in all, boys tend to interact frequently with their teachers either because they are good students or conversely because they are aggressive, noisy, and troublesome.

It should be emphasized here that not all troublemaking boys are low achievers; some of them will be among the best students. Available research does not provide much indication of the reactions of teachers to the scholastically good but noncompliant boys. It is possible that since both features are compatible with masculinity, teachers criticize and punish these boys little and only when they are excessively disruptive; they may, indeed, support and praise them more than equally achieving but quiet and compliant boys. Needless to say, similarly aggressive behaviour among high achieving girls is less well tolerated than it is in boys.

Although it is seldom discussed, there are, of course, some girls who are assertive or even aggressive and disruptive in class. While we hypothesised earlier that this may be helpful, especially to intelligent girls to escape becoming overly feminine and to learn how to learn, there are some indications that teachers may take even drastic measures to check this behaviour. It represents a double deviancy; first, because it is against the school norms of obedience and compliance and, second, because it goes against the stereotypes of appropriate behaviour. Teachers thus tend to be stricter with these girls and may not only give them poorer grades than others of equal ability but may see them as good cases for referral to school social workers or psychologists as problem children so that they are "cooled out" of school.

The mutual reinforcement by students and teachers of sex-differentiated behaviour

Student behaviour exerts considerable and direct influence upon teachers. The nature of this interaction is complex because teachers, operating with sex role stereotypes, may be especially inclined to perceive differences in the behaviour of boys and girls, since they already expect them to exist. Even when boys and girls behave similarly, therefore, teachers may perceive differences. At least two mechanisms are involved here: first, the same behaviour -- for example, exuberance in girls -- is more often labeled aggressive than it would be with a boy (Meyer and Sobieszek, 1972); second, teachers tend to be especially conscious of the behaviour of boys and girls that fits the pattern and they ignore others. By means of these mechanisms, existing differences between boys and girls become magnified.

Some studies have found that boys tend to be much more active, initiate more contacts with teachers and interact more frequently with them than girls do (Wernersson, 1982). Much of this overall difference may, however, be accounted for by those particular boys who do not do well scholastically and are troublemakers (Brophy and Good, 1970). There is also evidence that teachers have different expectations about the achievement of boys and girls and these influence the actual achievement of students (Spear, 1984). In one study of boys, it was found that when first grade teachers believe that boys are less successful in learning to read than girls, the boys achieve less than when teachers believe that boys are as successful as girls (Palardy, 1969). Another study showed that teachers in urban schools expect white girls to achieve less than white boys but they have the same expectations of black boys and girls. In suburban schools, on the other hand, where most children come from white, middle-class families, teachers expect as much from white girls as from white boys (Finn, 1972). That teachers from the first grade onwards have different achievement expectations of boys and girls, according to their race and social class, and students are influenced by these expectations, suggests the existence of important interaction processes between students and teachers. (Unfortunately, these studies do not control for intelligence. Intelligence is presumably an important variable in determining the achievement expectations of teachers. It is thus possible, for example, that when white girls are more intelligent than white boys, teachers may expect the girls to achieve to the same level as, or higher than, boys. When the level of intelligence is the same, however, teachers have lower expectations of girls.)

As is the nature of the interaction of factors, it is difficult to identify with precision the main initial direction of influence that brings forth reactions and establishes the interaction. It is reasonable to assume, however, that it is the achievement expectations that teachers have of first grade boys and girls that influence the pupils more than vice versa. But once pupils fulfil expectations by achieving accordingly, teachers can then base their attitudes not only on stereotypes but also on evidence about how boys and girls actually achieve. These expectations tend to solidify progressively, especially since it is known that the scholastic reputations of students carry over from one year to another. Once a student is known as a "good" or "bad" student, the effect tends to be cumulative over the school career and transfers from one teacher to another. Because of this, it is usually quite difficult for a student to change this image even when his or her performance level actually alters (Dalton, 1974).

The sex role assumptions and other educational factors influencing the behaviour of teachers towards girls and boys

Many have assumed that teachers treat boys and girls differently because of their sex role ideology, but there is increasingly evidence to suggest that teachers display sex-differentiated behaviour regardless of their adherence to such ideology. Questionnaire studies asking college students whether their teachers make sexist comments have shown that it is becoming less common as the level of awareness about sex discrimination increases (Monteiro, 1978). Observation studies of college classrooms show that teachers who do not make sexist remarks may nevertheless display a wide range of sex-differentiated behaviour (Safilios-Rothschild, 1979b). Such behaviour in teachers may be **interactional**, that is, they react differently toward male and female students because their own tendencies to do so are triggered or reinforced by features of the behaviour of the students themselves. Or, the sex-differentiated behaviour of teachers may be **structural**, that is, set off by such structural factors as the sex ratio in the classroom, the stereotyped gender label of the school subject in question or of the school. These structural characteristics may also lead to differential behaviour along gender lines by influencing the achievement expectations by teachers of males and females. A teacher in an engineering class with only one or two women, for instance, may have lower achievement expectations of the women than of the men but in an engineering class in which one-third of the students are women, the same teacher may be able to overcome such preconceptions and rely more on actual performance and ability (Safilios-Rothschild, 1979b).

A revealing example from a study of a military academy was the tendency of the teachers to correct and criticize women less than men and exert lower pressure for achievement on the female students. Women cadets on a self-defence course who performed incorrectly received mild and initial criticism despite the fact they they continued to perform poorly. Men, on the other hand, were continuously corrected and pressured to do better until they performed satisfactorily. In this way, the women did not learn how to correct their mistakes and were not encouraged to try harder and reach a satisfactory level of performance. Another example was the tendency of the teachers to allow women to give long, unclear answers without immediately providing clear critical feedback, a pattern they seldom followed with the male cadets (Safilios-Rothschild, 1979b). Instructors tended also to be more protective and helpful to women than to men. This occurred whether the women asked for

help or not and was expressed in different ways. One instructor helped the woman cadet finish her answer which he never did with the men. Another instructor intervened while a woman cadet was trying unsuccessfully to perform a task and actually did it for her. The men in the same training group had the principle of the operation explained to them and what they were doing wrong and were required to repeat the task until they had mastered it (Safilios-Rothschild, 1978). Insofar as the examples have more general application, women are not only constrained in their efforts to learn the task in hand but these later experiences reinforce the earlier socialisation of women at home and at school (Hermans, et al., 1972).

In the classrooms of the military academy, there was frequently only one female student, and this preserved the male atmosphere and elicited remarks on the part of both male and female teachers indicating that the single woman student is seen as marginal and, hence, rather neglected. Only in exceptional cases, when the personality and performance of the woman cadet are outstanding, is she able to escape the marginal status of being the only woman in the classroom, and this is helped when she has the clear support of the instructor.

Unless the solo woman is a "star-performer", then, she can be significantly intimidated by her structurally marginal position. This intimidation has serious scholastic repercussions since it involves the impaired ability to participate fully in class and effectively to channel energy into learning and achieving (Safilios-Rothschild, 1979b). These findings raise important policy questions when, as at present, women strive to enter fields stereotyped as "masculine" where they can find themselves to be the sole woman in classrooms or training groups.

SOME CONSEQUENCES FOR LEARNING AND EDUCATIONAL OUTCOMES

Sex role socialisation at home prepares boys and girls to: a) behave in sex-typed ways at school vis-a-vis peers and teachers; b) interpret the different media (television, storybooks, textbooks), and toys and games so that their sex role beliefs and behaviour are reinforced; and c) interpret the reactions of their teachers in ways that represent reinforcements of what they have learned from their parents. This continuous reinforcement of sex-typed behaviour has, as we have seen, serious consequences for the outcomes in terms of learning, intellectual development, achievement aspirations of boys and girls, and the development of self-confidence, competence, and independence.

One example of differential behaviour and expectations of teachers is the greater frequency of cognitive statements directed to girls in reading than in mathematics and to boys in mathematics than in reading and this corresponds to the observed achievement patterns of boys and girls in these subjects (Leinhardt et al., 1977). Opting for sex-typed subjects and avoiding those that are sex "inappropriate" can also be importantly explained by the cumulative impact of socialisation messages imparted by parents, media and teachers (Council of Europe, 1982; Pratt et al., 1984).

Interventions to diminish sex-typing in school-age boys and girls can be successful, however, especially if they persist over a significant time period. Even the brief exposure to books without the usual stereotypes have been found to have some immediate effects on beliefs about sex roles (Zimet, 1976). The portrayal in books of people who are not stereotypes but instead have some of both "masculine" and "feminine" characteristics (with the portrayal of the dilemmas as well as the positive aspects of their lives) have been found to be more effective than simple sex role reversals in reducing stereotyping (Stotsky, 1976; Schan, 1978; Frost, 1979). Furthermore, the degree of consistency as well as the breadth of the fields where stereotyping is removed are important additional factors that determine the degree of success of interventions. There is evidence, for example, that measures addressed at features such as achievement orientation are more generalisable than those where specific activities or occupations have had stereotypes removed (Scott, 1977; McArthur and Eisen, 1976).

Important lessons can be learned from the examination of policy interventions with boys and girls in school. Sex role awareness training workshops held by teachers for fifth and sixth grade students helped girls get rid of some stereotypes while the results were less uniformly positive for boys (Kesselman, 1974). In another evaluation, a number of different direct awareness interventions with female pupils from kindergarten to ninth grade showed that their perceptions of occupational roles became less stereotyped and their flexibility increased with respect to qualities that men and women could have. They were more willing than before to express interest in "masculine" activities. In the case of boys, however, the opposite was true. In the fifth grade there was little change in terms of sex role flexibility and by the ninth grade, despite the interventions, they had actually increased their sex stereotyping about occupational roles and personality attributes (Guttentag and Bray, 1976). The explanation for this difference between boys and girls is probably the less frequent portrayal of boys in non-stereotyped roles and activities in the new materials and approaches used in these interventions (Safilios-Rothschild, 1982). This does not mean, of course, that boys cannot change. In a junior high school experiment, students were six months in a co-educational physical education programme with team teaching (a man and a woman), in contrast to a control group of high school students with teachers of their own sex and segregated physical education activities. Despite the short exposure, the results showed changes toward a more egalitarian attitude both in boys and in girls. Boys in the experimental group underwent a significant change in social perceptions: they recognised that girls are not helpless and that they have other interests apart from the usual ones that make up the stereotypes. And both boys and girls, through daily participation in co-educational sports, had to realise that boys are not always superior to girls in athletic skills nor do teachers of the opposite sex have to conform to the stereotypes concerning their skills and approach (Shaver, 1974).

CONCLUDING SUMMARY

This chapter has shown how the "masculine" and "feminine" characteristics that constitute the traditional sex roles are engendered and nourished from the earliest days of infancy. It has shown how the complex of agencies and social institutions within which socialisation takes place -- parents in early infancy, the family setting, the school and teachers,

peers and friends -- are mutually reinforcing of these characteristics. It has discussed how "feminine" characteristics of better and more co-operative classroom behaviour, and greater conformity to rules and expectations, may be an immediate advantage in terms of the approval of the teachers. On the other hand, they prove to be a disadvantage in the longer term as the qualities of independence and competitiveness, as engendered in boys, encourage higher levels of ambition and achievement both in the later stages of education and in entry to the labour market.

The effect of these typical patterns of sex role socialisation and their implications for learning may be even more profound insofar as girls learn to do well at school in order to please the teacher rather than through interest in the subject and desire to master it. Unlike boys they may not sufficiently be **learning how to learn**. Clearly, these are only typical patterns associated with the masculine and feminine sex roles, not rigid categories to which all boys and girls belong. It shows, however, that the effects of the stereotypical patterns of socialisation of the sexes extend well beyond the attitudes that steer educational choices in adolescence. They influence the very process of learning itself.

Socialisation is not the same in all social milieux, and differences of social class and ethnic background are significant. Research on these cultural differences is, however, sketchy and often inconclusive. One finding that recurs is that black girls are more self-confident and independent in relation to boys, and in relation to their white contemporaries, and that they are encouraged in this by their parents. One question outstanding is whether the increasing levels of achievement among Black males will cause the more traditional sex roles to re-assert themselves.

Numerous studies have found that teachers behave differently towards boys and girls in ways that are reinforced in pupils' reactions to this differential treatment. Teachers tend to give more directional and instructional responses and greater attention to boys rather than girls. Whereas boys receive greater criticism from teachers, it is more often about their behaviour and motivation than the quality of their work. The reverse is true for girls. Hence the implied message is that boys are clever, but do not try hard enough; for girls, the message is that the effort is there, but not the brains. This, together with other reinforcing factors within the school in turn influence more general characteristics of the personality of girls and boys such as self-confidence and independence.

Explanation of these various ways in which teachers behave differently towards boys and girls has often been assumed to reside in the sex role ideology held by teachers. But structural factors such as the sex ratio in the classroom, the stereotyped gender label of the subject taught, or the traditional gender label attributed to the school have been found to be associated with levels of achievement, attitudes and behaviour. These structural factors should be more amenable to policy interventions. Moreover, interventions that have been instituted with the direct aim of reducing sex-typing in schools have shown positive results. This is particularly true if they are not short-lived, but instead continue over a significant period of time. The fact, therefore, that the roles and patterns engendered from earliest infancy have their roots in all the agencies of socialisation should not detract from the conclusion that much of the potential for change is within the compass of the education system.

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Chapter 3

THE DEVELOPMENT OF SEX STEREOTYPED ATTITUDES AMONG BOYS AND GIRLS: DIFFERENT MODELS OF THEIR ORIGINS AND THEIR EDUCATIONAL IMPLICATIONS

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THE DEVELOPMENT OF STEREOTYPED ATTITUDES

Models of sex differences in attitudes and attainments

Education prepares children for the division of labour along traditional sex lines that are expected by many in society to continue more or less unchanged, produced and reproduced through the operation of the two distinct cultures, the "masculine" and the "feminine". There is a masculine and a feminine way of moving, gesturing, dressing, talking, playing, working, that make members of either culture instantly recognisable. Three distinct but complementary models of the origins and nature of the male and female cultures are reviewed in a germinal article (Lee and Gropper, 1974). Each one has different implications for educational practice and outcomes.

With the **genetic deficit** model, girls are regarded as deficient or inferior in crucial intellectual abilities, because of genetically determined differences between the sexes. This imposes a necessary limitation on females ever being able to match male levels of achievement. It leads logically to the notion of separate educational provisions geared to the genetically determined strengths of men and women. Lee and Gropper regard the genetic deficit model as largely irrelevant from an educational perspective. It cannot, however, be quite so easily dismissed.

The **cultural differences** model focuses on sex differences in behaviour and differs from the previous model largely in terms of the view taken of their origins and sources; they are seen to exist in reality but they may be either learned or innate.

The **bicultural** model envisages compatibility between important aspects of the male and female cultures. It is thus different from the previous two since it is not so concerned with **differences** and their explanation. Its basic postulate is that men and women are quite capable of sharing a common range of information, interest and aspirations because sex role cultures need not be seen as mutually exclusive alternatives. Both sexes possess knowledge and capabilities appropriate to the two cultures and are

prevented from actually making use of them only by social expectations and other barriers, overt or covert.

By stressing the differences rather than the similarities between the sexes, there is the danger that the **cultural differences** model tends to overlook the degree to which different behaviour is specific to situations. For instance, young children will play with toys they know to be appropriate to the opposite sex until another child enters their playspace, when they return to the conventional plaything (Serbin, 1978). Another example is that studies in the United States show that white women appear to have a "motive to avoid success", at least when they are observed by male peers whereas Black women do not. With the **cultural differences** model, the emphasis on differences between the sexes tends to result in the dominant male culture defining the norm that is, by implication, regarded as superior or desirable. For instance, women can be shown to be less achievement-oriented than males. Does this make them "inferior" because the dominant male culture values achievement over, say, interpersonal skills? One of the implications of the **cultural differences** model for education is thus to make girls more like boys, with the risk of denying the value of the "feminine" culture in the process.

A good example of the **bicultural** model, in contrast, is the fact that boys are usually unwilling actually to engage in needlework (a singularly unpopular subject among them at school), yet in a context where sewing ability is seen as consistent with masculinity (surgeon sewing up patient, boy mending hole in his tent at camp) skills and knowledge shared by both sexes come into play (Mischel, 1966). Educational practice derived from this model would stress the similarities between girls and boys as learners as it positively regards the blending of typically masculine and feminine interests. Schools would provide children with equal access to traditionally sex-typed educational and cultural resources. To assist in the opening up of opportunities to both sexes, this model stresses the need for educators to address the "hidden curriculum" of teacher and pupil expectations, teacher modelling and the distribution of classroom space and educational resources.

Negative attitudes to subjects, courses and educational tracks associated with the opposite sex are strongly reinforced in the years of primary schooling, where different expectations of boys and girls construct different patterns of learning style and interests. Members of each sex retain self-esteem in the fulfilment of their own role, while pursuing gender specific goals in life, leading to striking sex differences in affective personality traits in adolescence. Attitudes and expectations in relation to success and careers are highly differentiated at precisely the point where crucial life choices face the young student. These differences between young men and women in adolescence should be viewed, therefore, as the culmination of a process that begins much sooner and that is strongly reinforced in school.

Early socialisation

The attitudinal differences that are crucial for educational choices and occupational futures do not suddenly make their appearance at the point of puberty; they are the outcome of social learning processes going back to earliest childhood. The literature shows that learned differences are engendered in various ways, and only in part through direct socialisation. More important is the implicit education provided by the different treatment

of girls and boys by adults, including teachers. One result is the greater concern of girls to seek adult and peer approval especially by complying with sex role norms. Children watch the adults around them, imitating and reconstructing "appropriate" sex role behaviour. Role modelling is a powerful mechanism of social learning. Another factor is the reinforcement of different norms, allowing, for instance, greater aggressiveness and independence in boys, (Sears, Maccoby and Levin, 1957; Bandura, 1965; Fagot and Patterson, 1969; Clarricoates, 1980).

Toys and play frequently provide boys but not girls with pre-scientific and practical experiences of educational value (Rheingold and Cook, 1975; Kutner and Levinson, 1978). According to both social learning and cognitive-development theories, children themselves play an active part in choosing sex-appropriate activities and attitudes for which they are rewarded by adults since this fulfills sex role expectations (Fauls and Smith, 1956; Mischel, 1966; Kohlberg, 1966). By the age of two, children show a preference for playmates of their own sex. By three years old, they can tell which toys are supposed to be for boys and which for girls and by four or five they already have clear notions about the way males and females are supposed to behave (Gettys and Cann, 1981; Archer, 1984).

There is evidence that sex role socialisation bears more heavily on boys. Studies with young children using measures of behaviour in play show that boys exhibit more anxiety if encouraged to select "sex-inappropriate" toys (Ross and Ross, 1974). Boys aged eight and over have been found to be rigidly anti-girl in the attempt to be masculine (Hartley, 1959). Parents, especially fathers, appear to be more anxious about "sex-inappropriate" activities and preferences on the part of their sons than of their daughters (Goodenough, 1957). There is growing interest in the negative effects of sex stereotyping for men (see Franklin, 1984; Franks, 1984; Naifeh and Smith, 1984).

Theories of sex role socialisation either emphasize individual personality factors or attribute sex differences to a process of social learning. In the latter case, the social environment is seen to structure individual behaviour, particularly where masculine and feminine roles are highlighted. The three models outlined above differ in the relative importance attributed to individual and social factors. The **genetic deficit** model corresponds to personality theories that assume that psychodynamic traits and cognitive differences between the sexes are innately predetermined. The **cultural differences** model corresponds to socialisation theories that implicitly accept the superiority of the dominant male culture constructed by the socialisation received by boys and men. The **bicultural** model assumes that the way is left open for possible changes in outcomes as a result of new patterns of socialisation.

The child enters school

The process of initiating boys and girls into separate sex role cultures continues at school. Teachers treat young children differently (May and Rudduck, 1983). They make sex-typed assumptions about girls and boys -- for example, they expect girls to be better behaved (Chasen, 1975). Teachers seem to prefer "feminine" behaviour in all pupils, such as being conforming and passive rather than independent and assertive (Fagot and

Patterson, 1969). Male socialisation makes it more difficult for boys to comply with these preferences. In consequence, children feel that teachers perceive girls in a more favourable light (Clift and Sexton, 1978/9). Paradoxically, this indirectly benefits boys, who learn to do without the approval of the teacher and become less dependent on it than girls do (discussed at length in the previous chapter).

The level of achievement of girls in the early years of school is generally higher than that of boys, yet by the secondary school they have often lost their initial advantage. The processes involved are subtle and profound. Boys get more time and attention from teachers whose attitudes to young children are coloured by implicit assumptions about future adult roles -- expectations that bear more resemblance to the known past than to the possible future. Girls tend to be regarded as diligent but unexciting pupils whose future lives will be dominated by their domestic responsibilities as wives and mothers. Despite the fact that the boys on average achieve less well in the primary school years, they are perceived as more interesting and more "truly" intelligent by teachers.

The enclosed world of the primary school offers pleasant and reassuring experiences for girls rather than stretching or challenging them. Their tendency to seek approval by conforming to pupil norms contrasts with the greater aggressiveness and rule-breaking of boys. Girls retreat from competition with boys and react more negatively to perceived failure because they attribute it more to factors residing in themselves such as lack of ability. Boys, on the other hand, tend to blame failure on external factors such as not paying attention or lack of interest (Dweck, 1983).

There is an extensive literature on the relatively greater difficulty that boys experience in learning to read (e.g. Gentile and MacMillan, 1976; Johnson, 1973-74; Sexton, 1969; Zimet, 1976). The most common explanation given for this is motivational, suggesting, for instance, that reading is rejected by boys because of its passivity (Zimet, 1976). It has also been argued that schools are essentially feminine institutions at variance with the "masculine" culture (Sexton, 1969) and that the presence of male teachers in elementary and primary schools would improve the performance of boys (Johnson, 1973-74). Concern that there are too many women among the teachers of young children, sometimes cited as responsible for the greater difficulty experienced by boys in learning to read, has led to a policy in some countries (such as Finland), of attempting to recruit more men into primary school teaching.

The development of sex stereotyped attitudes

There is evidence that the acquisition of sex-typed attitudes and behaviour, like other kinds of social learning, is developmental (Best et al., 1977; Birnbaum et al., 1980; Barry, 1980). It is during the early years of schooling that attitudes determining future choices are formed. It is important to note that the influence of parents though crucial is not exclusive; older siblings, television and the school itself are all powerful reinforcers of conventional sex roles (Barry, 1980; Frueh and McGhee, 1975; Whyte et al, 1985).

Early stereotyping is probably most important for the impression it creates in children that sex-related interests and activities are mutually exclusive. For example, as early as the age of seven, both girls and boys already see science as a masculine domain (Harvey, 1980). Moreover, their interests are differentiated along expected lines, with girls drawn to biological and botanical topics, and boys to those of physical science (Kelly et al., 1984, Whyte, 1986).

During socialisation, children learn not only their own sex role but the opposite one too:

> "For the ordinary little boy growing up, everything pertaining to the female gender role is brain-coded as negative and unfit for use. The opposite holds for little girls. The negatively coded system ... serves as a template, so to speak, of what not to do."
>
> (Money and Erhardt, 1972)

This helps explain why later, girls display insecurity and lack of confidence in contexts defined as male, and why boys strenuously avoid anything labelled as feminine. Traditional accounts have tended to assume that sex role socialisation is completed by early childhood, or at least by adolescence, but this is now increasingly open to doubt. Further developments can take place because of change in the social environment. After adolescence, when pressures to conform are reduced, young people may begin to come back to their reserve of attitudes and behaviours which they avoided previously as unsuitable. The ability to display characteristics associated with of the opposite sex may begin to emerge later in adult men and women, especially as new demands are made on them corresponding to the changing role requirements of men and women. In other words, the school years are precisely those in which sex role differentiation is greatest, with an artificial emphasis on the mutually exclusive nature of the two cultures.

Younger children judge their own sex role as more desirable than that of the opposite sex. The preferences of older girls and women for their own role become weaker than those of men only as women confront actual choices in their adult lives (Silvern, 1977). All "sex pride" scores decrease with age, but the effect is most pronounced for girls from an upper-working class urban background (Zalk and Katz, 1978). Using her revised masculinity/femininity scale, Bem has rated individuals on a scale of "androgyny", whose presence is indicated by high scores on positive aspects of both traditionally male and traditionally female qualities. Those with high scores tend to be happier than others who conform more closely to the personality characteristics typical for their own sex (Bem, 1975). "Androgynous" girls also have high self-esteem, but it does not mean that they are just like boys.

The adolescent task

Research on adolescence is itself biased; the youth culture of males is still held to be synonymous with youth culture in general, and until recently, there has been virtually no sociology of female participation in youth culture (Llewellyn, 1980, Griffin, 1985). Classic models of adolescence are almost exclusively based on studies of boys -- the adolescent task is seen as the need for the young person to adjust to work, to shift from the world of the home to the world outside during a period of transition. Boys are

frequently considered to find this problematic, in part because industrialisation and urban development have made adult work much less visible. Yet, instead of all young people undergoing the same processes and difficulties, these broader changes have affected the sexes differently. Girls have visible and different models from boys, in the form of adult female workers in the home. The development of modern domestic appliances represent only minor variations to this basic theme. What is problematic for girls, and presumably not for boys, is the conflict between the demands of the school (working autonomously and independently) and of the wider culture that dictates she should adopt a dependent feminine role. The adolescent task for girls is one of trying to integrate aspects of character that lead in different directions -- the attempt to negotiate a truce between the conflicting goals presented to her by school and by society (Denmark and Goodfield 1978; Murty, 1978). The school, therefore, is not always a simple agent of socialisation in ways congruent with all other social influences.

Striking sex differences in affective personality traits emerge during adolescence. Boys reveal more personal ambition and autonomy while girls are more sensitive and less self-centred (Head, 1983). Girls are more self-conscious, more vulnerable to criticism, more concerned with promoting interpersonal harmony and are, generally, more "people-oriented" while boys tend to stress achievement and competence (Rosenberg and Simmons, 1975). The female focus in adolescence on interpersonal success rather than on career-related achievement explains why aggregate sex differences in self-esteem are relatively small. Achievement failures will not necessarily dent self-esteem if the value preferences of girls are more strongly dependent on being well-liked than on being successful (Rosenberg and Simmons, 1975).

This does not mean that girls are not oriented to achievement at all. In a study of junior high school girls, using a questionnaire containing cue sentences with either John or Anne as a character achieving success, the girls rated success more positively than boys, contrary to the researchers' expectations. The authors concluded that younger girls are encouraged to achieve in a wide variety of situations, especially in school. Positive attitudes about success may be inculcated along with pressure to achieve. But by late adolescence, their achievement strivings have shifted from the academic to the social sphere, with an accompanying shift in attitudes towards success (Mokros et al., 1977). If making relationships matters more to adolescent girls than other things, this would partly explain why they prefer forms of knowledge involving interpretations of meanings, exploration of moral decision-making, literary works and language-based study. Science, mathematics and philosophy being universal in nature and involving large peer group responses can be expected to meet with a more ambivalent female attitude (Ward, 1975).

The Ward study involved in-depth interviews with a sample of working and lower-middle class girls of varying ability levels in their mid-teens. The girls possessed clearly distinct images of the nature of different forms of knowledge (derived from the Hirst scheme -- mathematical/logical, scientific/empirical, hermeneutic/social, philosophical, moral, aesthetic, and religious). They saw the empirical/technological world as a large and frightening one. This study is an interesting account of the attitudes of girls to cognitive aspects of school work. It does, however, seem to draw on a deficit model of femininity by suggesting that girls are constrained to

understand and observe the particulars of interactions between people while boys are "less magnetized to an understanding of particulars".

Expectations about work and careers

In adolescence, as reported above, sex differences in self-esteem levels are minimal and the greatest attitudinal discrepancies are occupational (Allen, 1980). Young adolescent girls tend to aspire to traditionally feminine occupations which, during the secondary school years, are seen to comprise six main areas: teaching (especially at primary level), nursing, catering, office work, employment in retail organisations, and hairdressing (Sharma and Meighan, 1980).

The phenomenon of lower educational aspirations is a feature of later adolescence. A comparison between girls at high school and women at college found the schoolgirls were more disposed towards intellectual and occupational attainment than college women, a finding consistent with the increasing general decline in female career commitment with age (Beedle et al., 1979). Regardless of school-leaving qualifications, boys are more likely to receive further education and training. Girls of medium ability are particularly deprived of opportunities to increase their qualifications. For women who leave school with minimal qualifications, the chances of obtaining training for employment are low in comparison with those of men (Douglas and Cherry, 1977; Sutherland, 1981).

There is an extensive American literature on "fear of success", following the study by Horner which found that a higher proportion of women than men among college students exhibited "fear of success" imagery in response to the cue: "After first term finals, Anne (John) finds herself (himself) at the top of her (his) medical school class" (Horner, 1970). More recent writers have suggested that it might be a sign of the conflict experienced by women between expectations about being "feminine" and their intellectual or career ambitions (Caballerro et al., 1975). More precisely, fear of success may be redefined as the fear of behaving in ways that do not seem suitable for a girl (Cherry and Deaux, 1978; Lockheed, 1975). Not surprisingly, female perceptions of success and failure are different from those of males. For girls, success appears more difficult to achieve and requiring effort, while boys see luck as a factor instrumental to achieving success (Mokros et al., 1977). Yet, paradoxically but not surprisingly, girls tend to attribute their own successful achievements in retrospective accounts to luck or other external factors, and their failure to lack of ability, while the opposite is true of boys (Dweck, 1983).

Recent changes in expectations for women may mean that young girls are less likely to imitate the life-patterns of their mothers. Roles are being redefined so rapidly that the importance of parental models as the major influence on the socialisation of girls cannot be assumed. It is for this reason that particular attention should be given to alternative and non-traditional role models introduced in schools since they can offer girls a wider view of their futures (Weiss, 1978; Small et al., 1982). The two studies referred to here report schemes that introduced school girls to women working in science and technology. But if educational intervention were to stop at that point, it would imply that all that needs to be done to make educational chances more equal is for girls to be more career-oriented as boys

already are. And this would be, in effect, a **deficit** theory i.e. it would assume that girls lack certain qualities compared with boys. The **bicultural** model, in contrast, regards the traditional sex role differentiation as dysfunctional for the changing adult roles of both men and women.

It is likely that the kinds of educational choices that boys make are also sometimes inimical to their long-term interests. It has been suggested, for instance, that stereotyped assumptions actually confer greater academic freedom on girls, who may choose any subject they like, without being concerned about its future employment potential, whereas boys reject language studies as non-vocational (Powell, in Powell and Littlewood, 1982). Boys are avoiding humanistic studies; arguably a loss in terms of personal development. Against this, of course, it must be recognised that girls face severe labour market disadvantages. Older women have major problems on the re-entry to the labour market. Conventional female qualifications and experience lead to the lower paid and the less secure jobs (OECD, 1985).

DEFICIT MODELS OF SEX DIFFERENCES IN EDUCATION

The genetic deficit model

Surveys of attainment show that often boys surpass girls on certain kinds of mathematical problems such as those of scaling/measurement, probability and space-time relationships. It has been a recurrent finding that boys perform better on three-dimensional spatial tasks than girls and differences have also been found in science achievement (Comber and Keeves, 1973; Johnson et al., 1983). Moreover, girls do not do as well as boys in solid geometry, where spatial visualisation plays an important part (Wood, 1977). Such differences have been attributed to a spatial ability linked gene (for discussion see Gray, 1981; Kahle, 1983) or to the slower rate of intellectual development of girls. The apparently poorer performance of girls in traditionally masculine areas has commonly been attributed to innate female inability or inferiority.

Most researchers draw on a range of possible factors as explanation of these differences which suggest that there may be some innate difference between the sexes, possibly genetic in origin, that affects the application of intelligence to certain forms of knowledge. Differences in spatial ability are frequently said to account for the male lead in various aspects of mathematical and problem-solving activities, and the existence of a spatial gene has been hypothesised by several researchers. Other biological arguments have been employed, particularly with reference to mathematics. It has been suggested that the development of girls is different in that they take longer to attain the Piagetian "formal operations stage". In their practice of mathematics, the female tendency to break problems into multiple stages may, it has been hypothesised, lead to an increased chance of error.

The implication of these biological arguments is that inferiority of female attainment is to be expected and that efforts for change will ultimately come up against natural inequalities of ability (e.g. Gray, 1981).

Limitations and inadequacies of the model

For educational policy-makers, the hypothesis of sex differences in actual ability must be regarded as at best tentative. In terms of explanatory power, it is inadequate on its own to account for gross disparities in educational performance and enrolments that are much larger than any measured differences of ability which have been established between boys and girls. Indeed, commentators who are interested in the promotion of female access to male preserves frequently discount biological explanations as having minimal or no implications for policies. The common criticisms of the biological determinist position is that it is not adequately substantiated, it draws too heavily on inferences from animals, it narrowly focuses on spatial ability (and even then ignores social as opposed to biological explanations of differences in spatial differences) and it gives too little attention to more general mathematical skills and to components of achievement other than ability such as motivation and anxiety (Kaminski, 1982).

Nevertheless, biological explanations of the **genetic deficit** kind continue to enjoy widespread credence for many practitioners since they appear to offer a straightforward confirmation of the naturalness and inevitability of existing patterns of sex difference in educational attainment. Because its basic tenet is the futility of attempting change, the belief in immutable sex differences in ability itself constitutes a powerful hindrance to movement towards more equal chances between boys and girls in education.

There are serious inadequacies in the **genetic deficit** model. Sex differences in education alter, and sometimes even disappear, over time -- a fact hardly consistent with natural inequalities. With the proper control of relevant variables, apparently firm differences can be considerably reduced. A number of examples illustrate this point. More girls in the United States can opt out of mathematics at an earlier stage of secondary education than in most Western European countries. It is consistent with **genetic deficit** explanations to argue that they drop mathematics because of their poorer performance, particularly on spatial tests. But these girls are also less likely to take other courses that have a component of spatial learning. When differences between American boys and girls in the number of "space-related" courses they have taken are co-varied out, the sex differences in spatial visualisation are largely eliminated (Fennema and Sherman, 1977). A comparable study of girls and boys who had taken 'O' level GCE courses in mathematics in England and Wales showed that when the mathematics-related experiences in other subjects such as physics or technical drawing were taken into account, no difference could be found in their performances (Sharma and Meighan, 1980).

While this evidence is not conclusive, because the lower measured spatial ability of girls may be the reason for their reluctance to choose mathematically-related courses, there are additional reasons that suggest flaws in the **genetic deficit** model. The above findings were based on samples of young adolescents. When differences in spatial ability appear at an early age, it is not so easy to identify and control for other relevant differences in the experiences of boys and girls. Some studies have, therefore, examined non-formal, pre-scientific, technical and "tinkering" experiences acquired outside formal schooling that could well account for sex differences in performance on tests of spatial ability (e.g. Kelly, Whyte and Smail, 1984; Smail, et al. 1982). National Assessment of Educational Progress (NAEP) surveys in the United States have also shown that girls have

far less opportunities to work with science materials and instruments or engage in other extra-curricular science activities, and such opportunities may be critical for the development of spatial skills. These findings suggest that spatial abilities are learned rather than innate.

A basic flaw in the biological or **genetic deficit** hypothesis, then, is that much of the evidence upon which it is based does not compare like with like. When girls and boys have had the same learning opportunities that support performance in mathematics or physics, formal or informal, their attainment scores are not sufficiently different to provide substantial support for the hypothesis of an innate male superiority in spatial visualisation. Equally telling, perhaps, is the fact that the same sex differences among adolescents and school age children are not consistently found either with very young children (Serbin, 1978) or with older students and adults (Mayes, 1982). Changes in socialisation and play experiences may thus already be contributing to narrowing the supposedly natural, and by implication unbridgeable, gap between the sexes.

An additional flaw in biological explanations of the **genetic deficit** kind arises from a series of findings showing the powerful effects of the context in which a problem is set, or the situation in which pupils have to devise a solution, upon the performance of both girls and boys. Where the presentation of an intellectual problem carries associations with masculinity or femininity, this can affect how boys or girls perform. For example, an identical mathematics problem was set in the supposedly masculine context of a stockbroker buying and selling stocks, and the feminine one of buying lengths of lace and satin to make a dress, and the girls found the problem harder when it concerned stocks (Graf and Riddell, 1972). In another study with young children, boys performed less well in a task indicated as one in which girls did better. In this case, however, the performance of girls was not affected when the task was described as one in which boys or girls did better or as neutral (Gold and Berger, 1978).

Independence is frequently viewed as a trait in which the sexes innately differ. Yet it can be manipulated in young children by cues and reinforcements from a teacher. Even the presence of other children of the same age but opposite sex alters play choices (Serbin, 1978) On an interest test, ten year-olds displayed a striking ability to manipulate their response to expectations about appropriate sex behaviour according to whether they were asked to be themselves or to pretend to be a child of the opposite sex (Hargreaves, 1977).

Competitiveness is another example of what is often seen as innately masculine behaviour but where the realities are more complex. At first, both boys and girls display competitiveness, especially with children of the opposite sex, but from a very young age, boys appear to be more competitive with girls. As they grow older, boys show a general competitive tendency while for girls, competitiveness is more selective and responsive to situational cues such as those provided by instructions or by the sex of another present (Moeley et al., 1979). For both boys and girls, competition with a boy increases the heart rate and this can be interpreted as indicating increased anxiety. The effect is not the same when the competition is with a girl (Valle et al., 1978). In a competitive situation with boys of the same age, girls demonstrated the ability to alter the level of their performance to

obtain maximum rewards, not just of success in the task but also of peer approval (Fischer et al., 1975).

Because the range of school activities commonly defined as feminine is narrower than the range in which boys are supposed to perform better, girls may be more sensitive to various external influences on their performance such as the learning setting or characteristics of other students and teachers, especially in competitive situations. This may partially explain why some studies have found that girls do not do as well in mixed or co-educational settings (discussed further below). It is thus the context, rather than biological inferiority, that explains at least a significant part of observed sex differences in performance.

Studies of the kind reported above indicate that children, and girls especially, possess reserve capacities and abilities that they do not use through fear that they might be considered inappropriately girlish or boyish. More recent discussions of female "fear of success" suggest it probably is most usefully viewed as showing that a strong fear resides in choices considered unfeminine because girls are not confident that their performance will be adequate. The avoidance by boys of "feminine" subjects may take a different form. Their fear will not so much be that they cannot do as well as girls, but that by their choice of these subjects they may lose face and status. In addition, there is some evidence that boys actually overestimate their intellectual capabilities, possibly because they acquire the habit of attributing temporary failures to extraneous factors that are open to change (Samuel, 1981). Girls consistently underestimate their abilities and often attribute their successes to the random factor of luck while at the same time blaming their own deficiencies for failure, which very fact can make it chronic and unchangeable (Dweck, 1983).

Sex differences in aspirations and attainments: findings consistent with the "cultural differences" approach

The **cultural differences** perspective focuses on the factors that are significant for subject choice, and on the different motivations adolescents have for learning particular school subjects. It concentrates on personality traits that supposedly distinguish the two sexes, it implies that girls should simply be less "anxious" or more self-confident -- in short, more like boys. Unlike the **bicultural** perspective, the focus is primarily on the changes which would have to be made in girls to make them more like boys, the dominant and, by implication, successful, prototype. The same findings may be consistent with both approaches; the policy implications are, however, different.

Sex role stereotyping is seen to set the seal on certain studies being viewed as appropriately masculine or feminine, patterns that are remarkably similar cross-culturally. Mathematics, science, and technology are regarded almost universally as masculine spheres; the most clearly feminine subjects are those with a domestic orientation (home economics, cookery, typing, child care) or with a strong language base. Concerning the mechanisms controlling choice, the literature on the female under-representation in science, mathematics and technology is generally more extensive and interesting than that on the under-representation of boys in language-based studies.

Explanations of the patterns differ substantially according to whether girls or boys are being considered. It is indeed rarely suggested that males would, if they chose to take up the supposedly feminine options, actually find themselves unable to succeed in them. But this is frequently assumed for girls and women in mathematics and sciences. Some have suggested a possible sex difference in psycho-linguistic functions to explain the poorer performance of boys in languages (see Powell, 1979). But Powell then recommends different teaching techniques as a remedy, implying that it is a learned difference. Burstall proposes that boys may lack the necessary "empathic capacity" to study languages successfully, but it is not clear whether she regards empathy as an innate or a learned quality (Burstall, 1975). An important factor in the avoidance of physical science by girls is often said to be its perceived difficulty. Physics is considered especially difficult, creating more "anxiety" in girls than in boys. Yet, languages are also seen by schoolchildren as difficult, and few commentators have discussed "anxiety" on the part of boys towards them (Kelly, 1975).

In contrast, within the **bicultural** model the way that boys and girls adopt different learning strategies is viewed as evidence of how similar their respective initiation is into the masculine and the feminine cultures. The context of a learning situation and the sex-typing of school subjects combine to demotivate girls and boys in areas characterised as appropriate for the opposite sex. These factors are defined not only by cultural assumptions about male and female "forms of knowledge" but also by the bias of curriculum materials and topics. This bias has, of course, been extensively discussed in the literature.

The image of subjects as male or female may be consciously grasped only in part. Powell (1983) found that school children could not clearly agree with the proposition "French is for girls". More subtle measures such as rating scales do indicate, however, that this assumption is being made by students. Science, in contrast, is seen as a male domain and the characteristics of scientists as incongruent with femininity; girls feel insecure about entering this male preserve (Curran, 1980). Boys see learning a language as "unmanly" (Burstall, 1975). Turning to science, girls lose interest in physics earlier than boys, yet some of the reasons given for this loss of interest -- that it is difficult or boring or taught very formalistically -- suggest a general need for innovation in science instruction that would be in the interests of boys just as much as of girls. Neglect of the social and human applications of science is a further disincentive to girls and negative attitudes to mathematics also arise because the topics and problems frequently included in existing textbooks are male-oriented (Brush, 1980; Wood, 1976).

The male or female image of a subject is not the only decisive factor since the different criteria by which boys and girls make educational choices must also be considered. In the IEA (International Association for the Evaluation of Educational Achievement) studies for the evaluation of achievement in French and English as foreign languages, girls performed better universally (Carroll, 1975; Lewis and Massad, 1975). It has often been remarked that boys avoid subjects such as second languages where no additional employment opportunities are perceived to result from them. Art, another subject taken more by girls than by boys, is not necessarily rejected because it is considered unmasculine but because it is "rarely thought to present any job opportunities for the school leaver ... or to have any intellectual

content" (Hatton, 1983). Employment criteria may thus be more important for boys than girls. Within the perspective of cultural differences, the choices of boys would thus be seen as more desirable, or at least as displaying an enlighteened self-interest, even if ultimately lacking maturity and self-knowledge (Head, 1983).

There are, of course, an array of more profound factors that reproduce the familar patterns of school subject choices. There is the lack of suitable role models, for either boys or girls, of adults who have made a non-traditional choice of course of study or occupation. Social pressure towards sex role socialisation, role assimilation, family structures, parental influences and the division of labour (Dupont, 1981) reinforce and confirm conventional options.

Sex differences in vocational expectations

Levels and direction of aspiration, including vocational expectations, are important in determining attainment. Using pictures of work settings in situ in the classroom (hence avoiding the problem of administering questionnaires to children), different vocational expectations are found even in young children (Barclay, 1974). Safilios-Rothschild (1979) reports evidence showing that as early as the age of three, boys and girls are aware of many different occupational choices as well as of the stereotyped masculine or feminine occupational roles. From 3 or 4 years-old up to the age of 11 or 12, girls report that women can only work in certain traditional occupations such as nursing, waitressing or librarianship, while men are not similarly limited. A classic example is the small girl who insisted that only men can be doctors, and women be nurses, even though her own mother was a practising physician. The example indicates the power of cultural stereotypes, to the extent that they can actually contradict first-hand experience. Children appear also to understand clearly the difference in power between men and women, and the subordinate position of women in social institutions. As early as the third grade at school, girls know the prestige attached to various careers and their prestige rankings of specific occupations correlate highly with those of adults.

Numerous studies have shown how adolescents sort their occupational plans into clearly traditional routes (e.g. Allen, 1980; Bennett and Carter, 1982; Herzog and Bachman, 1981; OECD/CERI, 1983). Interpreting the plans of older students, especially girls, is rendered problematic because it is difficult to know how far they are open aspirations or, alternatively, reflections of ambitions already depressed by societal expectations about appropriate work for men and for women. Changes in the perception of occupations also need to be taken into account. A longitudinal study of the occupational choices of high school seniors in the United States showed a general trend of convergence in attitudes between boys and girls but which was partly counteracted by the emergence in the 1970s of skewed choices for occupations which had not been sex-typed a decade earlier. An important factor in the increasing "feminisation" of the arts and humanities is undoubtedly the growth of the number of women intending to be in paid work for most of their lives who have simply expanded the numbers employed in fields requiring these specialisms -- the traditionally "feminine" fields. The big change that has taken place is thus not so much that women are moving into male jobs and vice versa, but that women are doing what they have always done

in the labour market, but in greater numbers (see Lueptow, 1981). The changes in attitudes towards women working seem to have been largely recognition that it is acceptable for women to work, but this is not the same as accepting women in male occupations. The attitudes of high school students presumably reflect the partiality of this move towards greater equality.

If attitudes to women working can change in a relatively short passage of time perhaps there are grounds for optimism that attitudes towards the suitability of different occupations for men and women can also change. But when orders of magnitude of actual redistribution are considered, the equivalent numbers to about two-thirds of all working men, or all working women, would have to change their occupations in order to achieve equal occupational distributions for both sexes (Blau and Hendricks, 1979). Seen in this light, attitudes can be changed much more easily than occupations (Herzog, 1982).

Some modest changes in attitude are apparent in ways relevant to the vocational aspirations of adolescents, especially girls. Rather more men, for example, are prepared to date intelligent women than in the past (Komarovsky, 1976). English schoolchildren, asked about the kind of spouse they would like, differed by sex in a way that seemed to indicate that this has gone somewhat further in boys than girls. As many as a third of the girls wanted a husband who was cleverer than themselves and 62 per cent wanted one who was about the same. Less than a fifth of the boys wanted a less clever wife, and more than two-thirds wanted one whose intelligence was about the same as their own. About a half of the boys thought a husband should "share in looking after the house and kids even if the wife is at home all day" compared with just over a third (37 per cent) of the girls. These findings are consistent with the hypothesis that there is now more general acceptance of the right of women to work outside the home for longer periods and that the competent, employed woman need not necessarily be threatening to the male ego. There may also have been a certain reduction in the ambiguity that women confront in their lives because of increasing acceptance that their role will be a dual one, but striking the balance between work and home is still much more difficult for women to achieve.

A survey of American youth has indicated that women are still more likely to be drawn towards educational and service-oriented settings for work and strive less for independent and competitive ones (Herzog, 1982). The exception is self-employment, which has gained as an area of considerable interest among women in recent years. The main patterns of sex differences in occupational values also do not seem to have changed significantly according to the survey, with status and monetary rewards still being more important to males than to females. This was, however, a study of high school seniors, who had not yet experienced work. Boys valued more than girls the importance of "an easy pace on the job" suggesting that girls are not yet aware at this age that one of the features of a working woman's life is the permanent pressure of insufficient time. The oft-heard assumption that women have lower aspirations for a job because they have a domestic role to fall back on may well be false. In a study of the young unemployed in Northern England, girls were just as frustrated and resentful about their joblessness as boys, in part because of its impact on their levels of consumption in line with the lifestyle of teenagers (Roberts, 1983).

THE BICULTURAL MODEL: THE CRITICAL ROLE OF THE SCHOOL IN OVERCOMING THE BARRIERS BETWEEN THE SEXES

The motivational causes described in the previous section can be attributed at least in part to the reinforcement by schools of cultural differences between the sexes. To the extent that schools can be changed then so can these factors be modified too. This shows that the **cultural differences** and **bicultural** models are not alternative accounts and may actually be complementary. The channelling of girls and boys into different routes at school tends to be covert rather than overt -- in most countries, for example, girls are channelled out of technical and vocational education. To explain this, many writers mention pre-emptive enrolment or curriculum patterns and premature career decisions or refer more generally to "socio-economic" factors. There is even sometimes clear discrimination, with girls simply not allowed to take certain school subjects, or excluded from opportunities under the rationale of shortage of staff or resources. In general, there is what has been called the "discouraging social milieu" (Brush, 1980) that effectively prevents most pupils from making educational choices outside traditional lines.

Teacher attitudes and expectations are important, particularly at the primary level. Parental expectations and the influence of textbooks and youth organisations reinforce traditional roles. Concerning the classroom itself, the evidence is still not conclusive about the kinds of teacher-pupil interactions that are helpful or not in overcoming traditional stereotypes. It has been proposed that female dependency may lead girls to adopt secure, teacher-approved behaviour and therefore to do well on rote learning but less well on problem-solving (Wood, 1976). Conversely, boys may reject the talk expected in the language lesson because it does not seem to fit their accepted idea of proper classroom activity.

Taking the examples of lower female achievement where they occur, such as the frequent poorer showing of girls in science, we can propose that ability, personality traits and even early stereotyping, important though they may be, cannot match the real-world educational and occupational spheres as the principal explanatory factors (see Kaufma , 1982). Girls and boys are treated differently and as distinct groups at school and in employment revealing the structural barriers to pupils who may wish to make non-traditional choices.

Some barriers to change external to the school

An obvious and universal barrier to change is the present highly segregated labour market. The division of labour by sex is a feature of every country (OECD, 1985). Traditionally feminine jobs rapidly lose their attractiveness to men as much because of their lower rates of pay as for their feminine connotations. Breaking out of the vicious circle is difficult. Employers in certain economic sectors receive so few applications from women that they are not geared to accepting more. Schools believe boys and girls will be less likely to gain employment in non-traditional fields and so steer them towards more conventional careers. Too often schools are ill-informed about the real nature of job opportunities in any field outside education itself i.e. the one teachers know.

It is important to consider too the influence of the home as a barrier to change external to the school. The effects of parental attitudes may be less important than has often been assumed in the past especially as gender roles are now being redefined very rapidly (Klecka and Hiller, 1977; Haber, 1980; Shepard, 1980). Nevertheless, the range of occupational choices perceived by a young person as available is influenced by the knowledge and experience of jobs in the family. The sons and daughters of engineers and doctors probably give these careers consideration because of their proximity as models and because of the importance of "inside information". There is a tendency for girls with working mothers to be more likely to intend working throughout their adult lives, and to be less bound by traditional sex types than other girls are (Hartley and Klein, 1959; Hoffman, 1974). A survey of factors affecting modern language learning associated parental support for these subjects with their belief in its relevance to their children's employment prospects (Burstall, 1975). That the criterion of vocational relevance is more apparent in the choices boys make may imply that greater parental influence is exerted upon them than upon girls.

In general, girls have fewer opportunities for pre-scientific and technical/spatial learning; they experience fewer extra-curricular activities that can enhance understanding of mathematics and science such as play with mathematical puzzles or computer games. At home, girls and boys are often given different household tasks and many girls will have less spare time than boys since they are required to do more around the house (Gannon, 1980; Kelly et al., 1984). While these activities of pupils outside the school are beyond the direct control of education authorities, positive intervention could provide children of both sexes with "compensatory experiences" for stereotyped activities and play that takes place in the home and with friends.

Internal school factors

A. Facilities and resources

School resources are often diverted towards male pupils especially when they are in short supply. Comparing the relative investment in the education of girls and boys, it has been shown how girls in the United Kingdom make use of the less expensive sectors of education such as non-advanced further education and teacher training while boys out-number girls in post-compulsory school education and in the universities (Byrne, 1981). This is repeated in the organisation of individual schools, exemplified by the common practice of those with a shortage of science facilities to timetable boys into a labouratory for physics and girls into a converted classroom for biology. Even in a system overtly committed to sex equality, girls may not be allowed to take certain subjects or courses because of a shortage of staff or lack of facilities (Newton, 1981; Hannan et al. 1983). Case studies have been used to map how girls are "sidetracked" out of traditionally male branches (Bennett and Carter, 1981).

Ormerod has outlined how "structural school factors" are crucial determinants of differentiated choices and a hidden process of selection occurs, especially when expensive facilities or qualified staff are in short supply (Ormerod, 1981, see also Byrne, 1974).

B. Co-education/single-sex education

The evidence concerning the relative benefits of single-sex or mixed education for girls is equivocal. Pupils in all-girls schools seem to enjoy certain advantages yet they often suffer from a restriction of choice in the subjects they can study, especially non-traditional options. An early survey of the attitudes of teachers and pupils about the transition to co-education concluded that both teachers and children were on the whole happier in co-educational schools (Dale, 1969). The study followed shortly the move in England and Wales to comprehensive education and was, in part, a defence of the new system. It noted the scholastic benefits that boys in particular acquired from doing their school work in mixed classes. The possibility that girls would suffer academically, if not socially, was not seriously explored. This has been precisely the criticism of some more recent commentaries. Some maintain that girls have actually suffered from co-education, that girls and boys "become negative reference groups for one another" thereby militating against non-traditional choices for both sexes, and that mixed schools have tended to become "boys' schools". (See, for example, Shaw 1980).

Polarisation of subject choices does tend to be more extreme in mixed schools (see Ormerod, 1981). Teaching and learning styles in the physical sciences favour boys in co-educational settings (Ormerod et al., 1979) so that girls have higher levels of achievement in these subjects in all-girls schools, while boys do somewhat better in co-educational establishments (Ormerod and Duckworth, 1975; Harding, 1981; Her Majesty's Inspectorate, 1979). A survey carried out in the United Kingdom showed that although fewer girls had the opportunity to study physics in single-sex schools, nearly a quarter of them chose to study it in years four and five of the secondary school (for pupils aged 14 to 16) when it was actually available. Although girls were more likely to be offered physics in mixed schools, fewer chose to study it (Her Majesty's Inspectorate, 1979). Harding (1981) concludes that performance in science is strongly influenced by the school "ethos" and the expectations about girls that this subtly conveys. Girls are more likely to see science as a male preserve when the teachers and pupils in these classes are predominantly male. They will often be concerned about the opinion that boys hold of them. They will fear being "odd", while the usual bias of teaching/learning styles and pedagogical practices towards boys exacerbates the situation.

Whether schools are co-educational is not, however, the only relevant factor. The classroom, and whether or not it is co-educational, may well be a crucial level of analysis. Teachers choose topics and employ styles that suit girls in single-sex schools, but male interests tend to dominate in the mixed school. Teachers are more likely to cater to the needs and interests of girls when there are no boys in the class. This is consistent with the fact that since the passing of the Sex Discrimination Act in the United Kingdom in 1975, there has been a much larger take up of cookery by boys than of technical crafts by girls. Boys who choose cookery can give vocational reasons for doing so and need not lose face, while their real choices have been broadened. Schools and teachers are less willing to accept girls in traditional "boys" subjects (Pratt et al., 1984). The pressure against "inappropriate" choices still operates, however, for boys as well as girls. In all-male schools, boys are more likely to choose biology or languages, and cookery if it is offered, than in mixed schools.

Whether a school is mixed or single-sex, the assumptions about the subjects appropriate for each sex are likely to be the same. There is little evidence to suggest that all-girls schools, for instance, are superior in the sense that they make the traditionally masculine subjects more available to female pupils (Bone, 1983). Stereotyping in mixed schools is almost certainly strengthened because of a need, felt by both teachers and pupils, to "create difference" from the opposite sex (Guttentag and Bray, 1976; Bone, 1983). This alone is not sufficient grounds for advocating a return to single-sex schooling, but rather it defines the problem and its solution as located in the mixed school itself. Such schools sometimes timetable subjects for girls against those for boys in ways that are not possible in single-sex establishments. Yet it should also be noted that all-girls schools usually have insufficient provision for mathematics, science and technical crafts, and few all-boys institutions offer home economics. All-girls schools even use the allocation mechanisms of compulsory subjects in the curriculum to support rather than discourage sex-typed subject choice.

Reviews of the evidence, drawing on international data, tend to confirm this latter observation. One such review stated a series of disadvantages of single-sex schooling in the following terms:

> "Segregation of the sexes can have repercussions on the curricula ... they frequently offer a narrower range of options ... the teachers in a segregated system are clearly differentiated ... the gulf between male and female teachers can result in differences in their level of qualification ... (and) disparities can arise ... from differentiation between types of course as a precursor to occupational guidance."
>
> (Dupont, 1981)

Another review drew on IEA 1970 data and found that students in single-sex settings performed better than those in mixed-sex establishments, but emphasised the importance of the higher social-class backgrounds of the girls in single-sex schools, the higher proportion of science teachers with university degrees in these establishments, and the higher educational aspirations of the pupils. These factors are seen as at least as important, if not more so, than the absence of social pressure from boys (Finn, 1980). The effects of ability and selection can thus be misleadingly confounded with the co-educational/single-sex issue. In England, it is only in the selective grammar schools that the tendency for girls to do better in physical sciences appears. In other words, the better performance of girls may stem not so much from the single-sex environment itself, but rather from the selectivity of the pupils and from a tradition of teaching physics, for example, which applies less in comprehensive schools and in the non-grammar school syllabus.

One way forward is thus to develop programmes specifically for girls if only on an experimental basis -- courses for girls in science and in engineering, for example, or, more generally, for girls only and boys only in the most sex-typed school subjects -- to discover more about the effects of mixed grouping on pupil behaviour and performance.

C. The curriculum

Sex bias in children's books and readers has been extensively studied in a large number of countries throughout the world (for example, the UNESCO

series, 1980). The existence of bias in picture books, reading schemes and children's literature generally is now well established. One fundamental manifestation of this bias is simply the lack of representation of women and female roles. Where people are mentioned or appear in illustrations, they are almost always male, and this tendency is especially exaggerated in such subjects as science and mathematics. A common example is the physics textbook with a disproportionate use of males, including the term "he", few references to females and the almost exclusive use of masculine objects and experiences as examples (Taylor, 1970). The clear inference for children to draw is that matters of supposedly feminine interest are peripheral and unimportant.

A second feature of curriculum and textbook bias is that materials tend to be either male-oriented or female-oriented rather than "bicultural". In science textbooks, the paucity of references to people and the absence of any form of social or human applications is indirectly biased against girls. The social implications of science have a much stronger influence upon choice for or against a science option for girls than they do for boys. The inclusion of more real-world topics in the science curriculum, generally treated as unimportant at the secondary school level, is desirable, and likely to be effective in attracting more girls to science subjects (Ormerod, 1971). Apprehension about science as a potentially dangerous force in the world, inimical to humanity, is one reason for the negative attitudes of girls. Greater stress on the positive impact of science and technology, and their potential for making life easier and more rewarding, would contribute to enhancing their appeal among girls (Ormerod, 1973). Conversely, just as girls are discouraged by the masculine bias of science materials, the emphasis in language textbooks upon shopping, fashion, and domestic themes makes them unnecessarily feminine.

The third aspect of bias is the most obvious one perhaps; the presentation of men and women in the curriculum as stereotypes. As expressed by one writer, the picture of the social world which emerges in books and texts written for schoolchildren is even "more sexist than reality" (Lobban, 1975; Hingley, 1983).

D. Teacher attitudes

Teachers play a critical role in the transmission of sex role stereotypes, not only through the content of what they teach, but also through their behaviour in the classroom, their interactions with pupils, and in their assumptions about the different skills and abilities that girls and boys possess.

There is little direct experimental work showing teacher attitudes and expectations in this area, but a number of researches have used projective techniques as well as questionnaires to tap their attitudes. One study, making comparisons with other social and administrative workers, showed teachers to be more conservative towards working mothers, with male teachers significantly more negative on this topic than women teachers. Younger members of the teaching force were more positive (Tetenbaum and Lighter, 1981).

The expectations of teachers are a factor in the performance of students, with obvious relevance to the question of the different attainments of boys and girls. In an early study, it was shown that when science teachers

expected boys to achieve at higher levels than girls, actual differences were larger than in classes where science teachers had more egalitarian expectations (Rowell, 1971). In a more recent example, teachers were given identical pieces of work randomly attributed to male or female pupils. Work attributed to a boy was generally rated higher for "scientific accuracy and understanding of principles" than the same piece of work believed to have been written by a girl. Boys were judged to have significantly more aptitude, more favourable attitudes and a greater interest in science, and assessed to be more suitable for a GCE "O" level physics course. Male teachers often gave lower grades than female teachers but otherwise these biases and assumptions about the abilities of boys and girls were the same irrespective of the sex of the teacher (Spear, 1983).

Teachers expect boys to be naturally better at, and more interested in, scientific, mathematical and technical subjects, whereas they expect girls to be less curious, less adventurous, and more interested in literature or domestic subjects. Their expectations tend to become self-fulfilling prophecies (Spear, 1985). Teachers in technical and craft subjects are particularly prone to hold traditional views about the relative capabilities of girls and boys (Pratt, 1984). As a principal learning resource in the classroom, and the arbiter of its social norms, the teacher necessarily exerts considerable influence on the formation of children's attitudes to specific subjects.

The literature on teacher-pupil interaction, and the ways it differs according to the sex of the pupil, has been reviewed in the previous chapter. Suffice it to say here that most studies find that boys participate more than girls in class and that both male and female teachers differ in their behaviour, according to whether the pupil is a girl or boy (Good et al., 1973; Fauls and Smith, 1956). Boys initiate more contacts with their teachers and are more successful at gaining teacher time and eliciting attention (Hartley, 1978). Some studies suggest that teachers invest more in teaching boys and may have difficulty even in remembering the names of the girls (Davies and Meighan, 1975; Stanworth, 1983). In subjects requiring practical work, boys tend to dominate available resources and equipment preventing girls from full participation (Whyte, 1983).

E. Guidance and counselling

Perhaps the most explicit example of how students are channelled along traditional lines is when they receive guidance concerning their future careers. Even if guidance is only one manifestation of such channelling, and is often far from the only decisive factor, its importance in this field is, nevertheless, clear. Some students undoubtedly are actively discouraged from making non-traditional choices. For others, the influence is more implicit -- counselling becomes a further voice reinforcing the familiar patterns of educational and work careers. Equally important is the potential role that guidance and counselling could play in actually breaking down these stereotypes and sex-typed choices.

A study in Scotland has examined the process of student choice, finding the usual divisions along gender lines (Ryrie et al., 1979). Some pupils made non-traditional early choices and changed their minds later, but more than two-thirds of pupils did not sway from their original selection of subjects.

"Most of the differences between initial choices and final timetables arose either because teachers when approached had discouraged individual pupils from taking certain subjects", the authors concluded "or because the schools had altered or disallowed the choices when timetables were being made up". The evidence shows that the processes at work are more profound than students simply following the explicit, sex-biased advice of their elders. This does occur, to be sure, but decisions and choices are taken because of the "internalisation of the expectations of the school" and a "generalised assumption on the part of all concerned about what is appropriate for boys and girls" (Ryrie et al., 1979).

The ways in which vocational guidance actively channels students along traditional lines has been studied using recordings of interviews. One study examined the advice given to female students who expressed indecision about whether to enter engineering or education as their chosen field. Both male and female counsellors disapproved of the "masculine" field. They suggested that engineering "is a man's field", "takes longer than education to train for", "requires working after 3 p.m.", is "unpeopled" (Pietrofessa and Scholssberg, cited in Chitayat, 1981).

F. The structure and timing of student choices

The choice of subject options offered to adolescents is one in which young people assert their masculinity or femininity. At the secondary level, pre-emptive patterns in the curriculum, together with premature specialisation, result in students closing off further course options at a relatively early age. High schools in the United States allow girls to drop mathematics at an early age, seriously foreclosing their later choices (Kahle, 1983). If only one science is compulsory, girls are likely to make biology their choice, even though it has less transfer value to other subjects than either physics or chemistry and is much less useful for entry to scientific occupations and courses. In Norway, where a larger number of non-compulsory options have been available in the high school curriculum since the mid-1970s, this has had the unintended effect of producing a "critical filter" of subjects that has actually reduced the numbers of girls following science courses (Skog, 1983).

It has been suggested that a major reason why so few women become scientists or engineers is the artificial choice that students have to make between sciences and the arts (Blackstone and Weinreich-Haste, 1980). But this really only applies in countries where the secondary school system requires early subject specialisation. In those which do not, more children have the chance to continue with studies in non-traditional subjects beyond the period of early puberty when the pressure to maximise sex differences is greatest. In the United Kingdom, the physical sciences are more easily dropped by girls while mathematics is normally compulsory up to the minimum school leaving age. In the United States, on the other hand, students can opt out of mathematics relatively easily and many girls do. Research and debate in the field of sex inequalities in education in the two countries reflect these differences, with a North American emphasis on the poorer attainment of girls in mathematics, and the related issue of spatial ability, while there is a large volume of British research on the factors contributing to the under-representation of girls in physical sciences.

In Italy and France, girls are well-represented in the academic streams where science is a compulsory subject, so that female under-attainment in science and mathematics seems to be less of a problem. Italian school-leavers require only a high school diploma for entry to university courses, and the proportion of women science undergraduates at Turin University rose from 20 to 50 per cent between 1970 and 1978 and about a third of all students in other science-based graduate schools are women. Women are also less likely than men to drop out of science faculties, possibly because of a process of self-selection, in terms both of ability and motivation prior to choice of a university degree (Viglietta, 1983).

Where subject choice can be postponed until the minimum school-leaving age, the likelihood of girls choosing physical science, mathematics and technology is increased considerably. In education systems like in England and Wales, early specialisation results in boys outnumbering girls in physics, for example, by three to one in compulsory schools. The pattern seems to be that there is a reduction of the numbers of girls in mathematical and science subjects because of the introduction of choices midway through secondary education. It highlights the effect of seemingly gender-neutral organisational changes on the performance and choices of boys and girls. Postponement of choice may well be a necessary prerequisite, if not a sufficient one, to bring about greater equalisation of the sexes in different educational programmes and occupations.

In summary, the school is one of the prime agencies of sex differentiation. It frequently serves to reinforce the barriers between curricula and courses, traditionally regarded as suitable for girls or boys only. Comprehensive co-educational school systems that delay subject choice are probably more likely to contribute to "bicultural" change than segregated systems or those that require premature specialisation. The frequent norm of sex biased curriculum materials and traditionalist attitudes in teachers confirm rather than challenge inequality between the sexes. Vocational guidance is a particularly clear channel by which pupils at school are directed, more or less consciously, into conventional routes during and after school. Change in these school-based factors is necessary if more girls and boys are to have the opportunity to study areas of knowledge or enter occupations from which they have been traditionally excluded. Policies directed towards "bicultural" change can deal even-handedly with the artificial barriers confronting **both** sexes, promising thereby the prospect of a reduction of differences in attitudes and ultimately in educational choices, performance, and labour market outcomes.

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Part Two

THE STATISTICAL EVIDENCE

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Table 1

AUSTRALIA

PRIMARY, SECONDARY AND HIGHER EDUCATION BY SEX:
1976 AND 1981

Level of Education	1976			1981		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Primary(1)	1828.9	48.6	51.4	1871.6	48.6	51.4
Compulsory Secondary(2)	685.3	48.7	51.3	675.4	49.0	51.0
Post-Compulsory Secondary(3)	432.9	49.1	50.9	440.4	50.9	49.1
Higher(4)	288.6	41.7	58.3	331.7	45.5	54.5
University	-	37.7	62.3	-	42.7	57.3
Non-University	-	46.2	53.8	-	48.2	51.8

(F + M = 100 per cent)

1. Separate statistics for pre-primary no longer available.

2. Year 7 (in some states), years 8 and 9 in all states except Tasmania which includes year 10.

3. Years 10, 11 and 12 in all states except Tasmania which excludes year 10.

4. Universities and Colleges of Advanced Education, excludes TAFE.

Source: Statistics Unit, Commonwealth Department of Education. Based on Australian Bureau of Statistics data.

Table 2

AUSTRALIA

PERCENTAGE ENROLMENTS IN YEAR 12 (HIGHER SCHOOL CERTIFICATE) SUBJECTS IN 3 STATES AND TERRITORIES BY SEX: 1981 AND 1982

Subject Group	Australian Capital Territory (1982)		Tasmania (1981)		South Australia (1982)	
	F	M	F	M	F	M
	(%)		(%)		(%)	
English	54	46	67	33	58	42
Languages	76	24	73	27	71	29
Mathematics	49	51	32	68	43	57
Science	49	51	45	55	47	53
History	60	40	67	33	65	35
Social Science	59	41	49	51	57	43
Art/Craft	72	28	72	28	59(1)	41
Design/Technology	12	88	17	83	32(2)	68
Home Science	90	10	-	-	83	17
Physical Education	49	51	-	-	50	50
Music	59	41	68	32	65	35

(F + M = 100 per cent)

Source: Youth Policies, Programmes and Issues: An Australian Background Paper, Department of Education and Youth Affairs, Canberra, 1983, Table 2.8.

Table 3

AUSTRALIA

APPARENT RETENTION RATES(1) FOR THE FINAL YEARS (YEARS 11 AND 12) OF SECONDARY SCHOOLING BY SEX: 1971, 1975, 1980, 1982

		1971	1975	1980	1982
Retention rate from first to penultimate Year (11)	F	42.7	50.3	<u>57.3</u>	<u>60.8</u>
	M	<u>49.1</u>	<u>50.7</u>	50.8	54.2
	Total	46.0	50.5	54.0	57.4
Retention rate from first to final year (12)	F	26.9	33.6	<u>37.3</u>	<u>39.9</u>
	M	<u>34.1</u>	<u>34.6</u>	31.9	32.9
	Total	30.6	34.1	34.5	36.3

1. The rates are derived by expressing current enrolment levels in years 11 and 12 as a percentage of enrolment in years 7/8 four or five years previously, at the beginning of secondary schooling according to the State. It gives an apparent retention rate since no account is taken of transfers, grade repetitions or net changes to the school population because of migration.

Note: The higher rate is underlined.

Source: Youth Policies, Programmes and Issues: An Australian Background Paper, op.cit., Table 2.1.

Table 4

AUSTRALIA

TECHNICAL AND FURTHER EDUCATION ENROLMENTS BY SEX: 1977, 1980, 1982

Level of Education	1977 F (%)	1977 M (%)	1980 F (%)	1980 M (%)	1982 F (%)	1982 M (%)
Streams 1-5(1)	35.6	64.4	39.4	60.6	41.4	58.6
Stream 6(2)	71.7	28.3	67.9	32.1	71.1	29.9
All streams	44.7	55.3	47.2	52.8	50.0	50.0

(F + M = 100 per cent)

1. Basic trade, post-trade, other skilled, preparatory, remedial, and voctionally oriented courses not classified elsewhere.
2. Adult education courses, all enrolments being part-time or external.

Source: Selected TAFE Statistics, 1980 and 1982, Commonwealth Tertiary Education Commission publications.

Table 5

AUSTRALIA

STUDENTS ENROLLED IN BACHELOR DEGREE (1) COURSES IN UNIVERSITIES BY FIELD OF STUDY AND SEX: 1976, 1982 (2), 1983

Field of Study	1976			1982			1983	
	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M	F (%)	M
Humanities	39 928	58.8	41.2	38 461	64.8	35.2	65.0	35.0
Fine Arts	619	61.4	38.6	901	62.0	38.0	61.4	38.6
Social and Behavioural Sciences	6 249	62.7	37.3	8 653	65.1	34.9	65.7	34.3
Law	8 248	26.7	73.3	8 910	40.1	59.5	41.3	58.7
Education	6 418	54.2	45.8	5 804	68.6	31.4	70.2	29.8
Economics, Commerce and government	16 220	19.7	80.3	18 767	30.9	69.1	32.8	67.2
Medicine	9 986	38.1	61.9	10 198	41.1	58.9	42.0	58.0
Dentistry	1 542	19.1	80.9	1 337	27.9	72.1	29.1	70.9
Natural Sciences	20 331	33.1	66.9	21 769	38.6	61.4	39.2	60.8
Engineering, Technology	9 549	2.2	97.8	10 724	6.5	93.5	7.1	92.9
Architecture, building	2 682	18.8	81.2	3 118	26.0	74.0	26.7	73.3
Agriculture, forestry	2 210	20.7	79.3	2 026	29.6	70.4	29.6	70.4
Veterinary Science	1 155	28.7	71.3	1 234	45.1	54.9	48.0	52.0
Not Stated	111	46.8	53.2	90	57.8	42.2	55.3	44.7
Total	125 248	39.1	60.9	131 992	45.6	54.4	46.1	53.9

(F + M = 100 per cent)

1. Includes undergraduate and post-graduate bachelor courses at both pass and honours levels.

2. 1976 figures show course enrolments (hence some double-counting of students). 1982 figures show students.

Source: ABS, University Statistics (Catalogue No.4208.0).

Table 1

AUSTRIA

PRIMARY, SECONDARY, AND HIGHER EDUCATION BY SEX:
1971-72, 1974-75, 1981-82

Level of Education (1)	1971-72			1974-75			1981-82		
	Total No. of Pupils (000's)	F (%)	M	Total No. of Pupils (000's)	F (%)	M	Total No. of Pupils (000's)	F (%)	M
General Schooling	1 125.7	48.5	51.5	1 153.2	48.6	51.4	979.8	48.4	51.6
Compulsory	974.5	48.9	51.1	985.3	48.7	51.3	799.3	48.1	51.9
Upper level	151.2	45.9	54.1	167.9	48.1	51.9	180.5	50.2	49.8
Vocational Schooling	249.0	36.6	63.4	288.5	37.7	62.3	377.7	40.2	59.8
Compulsory	143.1	32.2	67.8	162.2	31.4	68.6	197.8	33.0	67.0
Middle level	71.8	47.6	52.4	78.6	52.2	47.8	96.8	51.8	48.2
Upper level and Academies	34.1	31.6	68.4	47.7	35.5	64.5	83.1	43.8	56.2
Teacher Training	12.8	78.0	22.0	14.8	81.7	18.3	17.5	72.1	27.9
Middle level	4.6	99.3	0.7	6.1	99.3	0.7	8.8	66.6	33.4
Academies	8.2	66.2	33.8	8.7	69.4	30.6	8.7	77.7	22.3
Higher Education	62.9	27.5	72.5	82.4	32.6	67.4	115.4	39.8	60.2
Universities and other higher schools	59.2	26.5	73.5	77.5	31.7	68.3	110.2	39.5	60.5
Art schools	3.7	44.7	55.3	4.9	45.8	54.2	5.3	45.9	54.1

(F + M = 100 per cent)

1. Includes public and private education.

Source: Österreichische Schulstatistik 1971-72, table 131; 1974-75, table 131; 1981-82, pp.332-333.

Table 2

AUSTRIA

STUDENTS IN MEDIUM-LEVEL AND HIGHER SECONDARY TECHNICAL SCHOOLS BY SEX AND TYPE OF SCHOOL: 1976-77, 1980-81, 1981-82

a) Medium Level Secondary Technical

Type of School	1976-77			1980-81			1981-82		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Technical and Trade Schools									
Technical Trade, Arts and Crafts	9 408	13.3	86.7	13 141	13.2	86.8	14 119	13.4	86.6
Clothing Trade	2 967	98.8	1.2	2 480	99.2	0.8	2 332	99.0	1.0
Department of Fashion Design	-	-	-	207	96.6	3.4	211	95.3	4.7
Tourism	1 976	49.4	50.6	2 500	54.6	45.4	2 750	53.0	47.0
Commercial Schools									
One year Commercial	553	65.3	34.7	284	64.8	35.2	296	66.2	33.8
Two year Commercial	1 028	78.8	21.2	954	74.3	25.7	789	76.4	23.6
Electronic Data Processing	283	30.0	70.0	376	35.1	64.9	444	32.7	67.3
Medium level commercial schools	26 762	65.9	34.1	24 405	70.3	29.7	24 595	71.4	28.6
Domestic Science Schools									
Standard form; one year	4 536	99.9	0.1	4 622	99.4	0.6	4 682	99.0	1.0
Standard form; two year	1 633	100	0	1 930	99.8	0.2	1 942	99.8	0.2
Standard form; three year	6 505	100	0	8 040	100	0	8 226	99.9	0.1
Schools for Social Occupations	1 162	95.8	4.2	1 346	93.2	6.8	1 412	93.4	6.6
Agriculture and Forestry Schools									
Agricultural schools	7 002	38.0	62.0	9 941	43.6	56.4	-	-	-
Special agricultural schools	16 795	17.2	82.8	16 615	21.5	78.5	-	-	-
Schools for Forestry	26	0	100	30	0	100	-	-	-
Special schools for Forestry	5 483	0	100	7 384	9.9	90.1	-	-	-

Table 2 (Continued)

AUSTRIA

STUDENTS IN MEDIUM-LEVEL AND HIGHER SECONDARY TECHNICAL SCHOOLS BY SEX AND TYPE OF SCHOOL: 1976-77, 1980-81, 1981-82

b) Higher Level Secondary Technical

Type of School	1976-77			1980-81			1981-82		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Technical and Trade Schools									
Technical and Trade schools	24 222	2.7	97.3	28 883	3.5	96.5	28 352	4.6	95.4
Arts, Crafts and Clothing	246	94.3	5.7	672	97.9	2.1	788	97.8	2.2
Tourism and social occupations	1 088	61.8	38.2	1 602	59.8	40.2	1 972	65.4	34.6
Commercial Schools	20 783	53.8	46.2	28 278	59.1	40.9	30 801	60.3	39.7
Domestic Science Schools	7 497	99.9	0.1	10 560	100	0	11 171	99.9	0.1
Schools for Nursing and Related Occupations	-	-	-	913	96.5	3.5	952	96.3	3.7
Agriculture and Forestry Schools									
Agricultural	1 868	33.2	66.8	2 558	34.2	65.8	-	-	-
Forestry	241	0.4	99.6	557	0.2	99.8	-	-	-

(F + M = 100 per cent)

Source: Österreichische Schulstatistik, Volume Nos. 26, 30 and 31, as presented in the report prepared by the national authorities.

Table 3

AUSTRIA

STUDENTS IN UNIVERSITIES BY SEX AND LINE OF STUDY:
1970-71, 1974-75, 1979-80, 1983-84

Line of Study	1970-71			1974-75			1979-80			1983-84		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Theology	887	9.8	90.2	1 396	19.9	80.1	2 297	33.3	66.7	3 110	36.0	64.0
Law	4 468	15.7	84.3	5 132	20.1	79.9	12 421	30.3	69.7	15 314	34.3	65.7
Social Sciences and Economics	6 715	16.3	83.7	10 596	22.2	77.8	14 329	29.9	70.1	21 416	36.1	63.9
Medicine	5 397	26.4	73.6	8 606	32.0	68.0	15 209	40.4	59.6	17 703	44.9	55.1
Philosophy and Human Sciences	2 645	41.2	58.8	5 221	47.2	52.8	8 009	51.0	49.0	11 745	54.1	45.9
History and Cultural Sciences	2 389	47.0	53.0	3 412	52.1	47.9	5 251	55.3	44.7	8 393	58.8	41.2
Philological Sciences	3 547	59.7	40.3	6 937	64.5	35.5	10 909	68.9	31.1	12 176	70.7	29.3
Translation and Interpreting	778	81.0	19.0	1 328	80.6	19.4	2 405	84.0	16.0	3 387	84.0	16.0
Natural Sciences	4 917	27.7	72.3	7 355	33.6	66.4	9 132	39.0	61.0	11 012	43.4	56.6
Pharmacy	1 012	62.7	37.3	1 320	67.0	33.0	1 509	71.4	28.6	1 972	75.2	24.8
Physical Education	501	39.3	60.7	681	42.6	57.4	1 348	43.0	57.0	1 977	49.1	50.9
Arts and Natural Sciences(1)	152	44.1	55.9	898	44.3	55.7	1 036	61.4	38.6	-	-	-
Civial Engineering, Architecture and Area Planning	3 312	7.9	92.1	3 660	10.1	89.9	4 788	13.4	86.6	5 475	17.4	82.6
Mechanical Engineering	1 613	0.3	99.7	1 740	0.4	99.6	1 950	0.8	99.2	2 844	1.3	98.7
Electrical Engineering	1 594	0.4	99.6	1 906	0.6	99.4	2 371	0.9	99.1	3 217	1.6	98.4
Natural Sciences(technical)	2 051	5.3	94.7	2 870	10.0	90.0	3 392	13.6	86.4	5 024	16.3	83.7
Engineering(short courses)	259	38.2	61.8	324	36.4	63.6	550	34.9	65.1	959	33.7	66.3
Mining	450	0.4	99.6	608	1.5	98.5	803	5.7	94.3	1 124	6.3	93.7
Soil Cultivation	1 001	9.3	90.7	1 113	12.3	87.7	2 076	19.3	80.7	3 037	23.6	76.4
Veterinary Science	400	16.0	84.0	699	25.5	74.5	1 230	35.1	64.9	1 578	43.5	56.5
Pilot Project Studies	-	-	-	215	20.0	80.0	1 010	28.6	71.4	2 417	30.3	69.7
Other	91	29.7	70.3	225	28.9	71.1	620	46.0	54.0	628	46.0	54.0
Total(including doctoral students)	44 179	25.3	74.7	66 242	32.4	67.6	102 645	39.1	60.9	138 642	41.7	58.3
Doctoral students	-	-	-	-	-	-	-	-	-	4 115	26.0	74.0

(F + M = 100 per cent)

1. Not otherwise classified.

Sources: Women and University, Federal Ministry of Science, Vienna, 1981; Hochschulbericht, 1984, Bundesministerium für Wissenschaft und Forschung, Vienna, Table 9.23.

Table 1

BELGIUM

PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION (1)BY SEX: 1970-71, 1974-75, 1979-80, 1983-84

Level of Education(2)	1970-71			1974-75			1979-80			1983-84		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	458.7	49.0	51.0	441.9	48.9	51.1	384.9	48.8	51.2	393.0	49.8	50.2
Primary	1 021.5	48.5	51.5	974.6	48.5	51.5	877.1	48.5	51.5	789.0	49.9	50.1
Secondary	722.1	48.4	51.6	771.5	48.9	51.1	850.9	49.3	50.7	855.7	48.9	51.1
- Lower Secondary	498.2	47.0	53.0	503.7(3)	47.0	53.0	304.9	46.1	53.9	136.0	45.7	54.3
. General	220.1	47.5	52.5	173.4	47.7	52.3	119.3	49.1	50.9	62.8	49.7	50.3
. Technical and Professional	270.2	46.2	53.8	194.1	47.8	52.2	185.6	44.1	55.9	73.2	42.2	57.8
- Upper Secondary	223.9	51.6	48.4	267.8(3)	52.0	48.0	207.4	56.2	43.8	156.6	55.5	44.5
. General	106.9	44.1	55.9	122.7(3)	47.5	52.5	104.7	48.6	51.4	66.1	50.2	49.8
. Technical and Professional	101.1	56.6	43.4	108.3	59.2	40.8	102.7	63.9	36.1	90.5	59.3	40.7
- Renové	.	.	.	-	45.7	54.3	338.6	48.1	51.9	532.1	48.6	51.4
. 1st Level	.	.	.	-	-	-	-	-	-	217.8	48.4	51.6
. 2nd Level General	.	.	.	-	-	-	-	-	-	80.7	53.0	47.0
. 2nd Level Technical and Professional	.	.	.	-	-	-	-	-	-	121.3	42.4	57.6
. 3rd Level General	.	.	.	-	-	-	-	-	-	50.0	54.4	45.6
. 3rd Level Technical and Professional	.	.	.	-	-	-	-	-	-	62.2	51.1	48.9
Higher	124.9	36.2	63.8	159.4	42.5	57.5	188.2	43.6	56.4	215.4	46.7	53.3
- University	75.1	28.6	71.4	81.0	32.6	67.4	92.5	35.9	64.1	100.4	39.8	60.2
- Non-University	49.8	47.7	52.3	78.4	52.8	47.2	95.7	51.0	49.0	115.0	52.9	47.1

(F + M = 100 per cent)

1. Special education is included in Secondary totals. A small number of art students are excluded.

2. Full-time students only for French-speaking system.

3. Renové students (168 535 enrolments) included in lower and upper secondary.

Sources: Annuaire Statistique de la Belgique 1980, Ministère de l'Education nationale and Ministerie van Nationale Opvoeding; Etudes et Documents: Effectifs Scolaires 1983-84 des Régimes Français et Allemands, Service Statistiques et Programmation; and data supplied by the Dutch-speaking education authorities.

Table 2

BELGIUM

NON-UNIVERSITY TEACHER TRAINING BY TYPE AND SEX:
1971-72, 1974-75, 1979-80, 1983-84

Type of Teacher Training	1971-72			1974-75			1979-80			1983-84 (1)		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Pre-primary(2)	3 322	100	0	839	100	0	2 118	99.2	0.8	3 742	97.8	2.2
Primary(3)	13 463	62.9	37.1	6 117	71.1	28.9	7 590	71.1	28.9	7 688	73.4	26.6
Middle Level	6 090	62.6	37.4	10 582	63.4	36.6	10 972	61.5	38.5	8 967	62.6	37.4
Middle Level/ Technical	2 015	82.0	18.0	2 273	71.1	28.9	3 093	77.9	22.1	3 136	78.6	21.4

(F + M = 100 per cent)

1. Full-time students only for French-speaking system.

2. Since 1974-75, it is part of the higher education sector.

3. Since 1972-73, it is part of the higher education sector and the course length increased.

Sources: Annuaire Statistique de la Belgique 1980, Ministère de l'Education nationale and Ministerie van Nationale Opvoeding; Etudes et Documents: Effectifs Scolaires 1983-84 des Régimes Français et Allemands. Service Statistiques et Programmation; and data supplied by the Dutch-speaking education authorities.

Table 3

BELGIUM

UNIVERSITY EDUCATION(1) BY BRANCH OF STUDY AND SEX:
1978-79, 1981-82, 1983-84

Branch of Study	1978-79			1981-82			1983-84		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Religious Studies	600	42.7	57.3	976	36.7	63.3	1340	39.5	60.5
Philosophy (Ecole St. Th. d'Aquin)	257	24.1	75.9	265	23.0	77.0	527	25.4	74.6
Philosophy and Letters	13 010	57.4	42.6	13 631	58.9	41.1	18 013	59.2	40.8
Law	10 779	34.8	65.2	11 791	38.0	62.0	13 322	40.9	59.1
Sciences	9 152	38.4	61.6	9 740	38.2	61.8	11 856	39.6	60.4
Medicine	19 753	32.2	67.8	18 297	35.5	64.5	17 835	39.4	60.6
Pharmacy	2 472	57.2	42.8	2 643	61.2	38.8	3 160	63.9	36.1
Physical Education	3 618	41.3	58.7	3 773	46.9	53.1	4 524	48.9	51.1
Veterinary Science	2 319	23.0	77.0	2 543	29.8	70.2	2 487	35.5	64.5
Applied Sciences	6 825	6.1	93.9	7 389	7.3	92.7	8 226	9.3	90.7
Agronomy	2 770	16.3	83.7	3 280	20.9	79.1	3 692	24.6	75.4
Social, Political and Economic Science	7 238	26.9	73.1	8 694	29.7	70.3	10 353	32.2	67.8
Applied Economics and Commerce	5 018	19.2	80.8	6 307	21.6	78.4	8 555	26.3	73.7
Pedagogy and Psychology	5 172	56.9	43.1	5 968	58.6	41.4	6 827	60.3	39.7
Interdisciplinary Centres	386	23.1	76.9	585	23.9	76.1	1 059	30.5	69.5
Total	89 638	35.3	64.7	95 882	37.7	62.3	111 781	40.5	59.5

(F + M = 100 per cent)

1. Covers the 19 university-level institutions.

2. National and foreign students.

Sources: Annuaire Statistique de la Belgique 1980, Ministère de l'Education Nationale, Ministerie van Nationale Opvoeding; data supplied by national authorities.

Table 1

CANADA

HIGHER EDUCATION ENROLMENTS BY SEX, LEVEL AND MODE OF STUDY: 1965, 1970, 1975, 1981

Level and Mode of Study	1965			1970			1975			1981		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Universities												
Undergraduate: full-time	187.0	32.7	67.3	276.3	36.7	63.3	330.5	42.4	57.6	354.5	46.7	53.3
Undergraduate: part-time	65.3	41.2	58.8	142.2	42.4	57.6	158.3	54.3	45.7	219.5	59.9	40.1
Graduate: full-time	-	-	-	33.2	22.3	77.7	39.9	29.2	70.8	47.2	37.3	62.7
Graduate: part-time	-	-	-	14.4	23.7	76.3	27.0	30.0	70.0	32.4	40.7	59.3
Non-University Full-time enrolments	69.4	58.8	41.2	166.1	46.9	53.1	221.6	49.6	50.4	273.4	51.5	48.5

(F + M = 100 per cent)

Source: Data supplied by national authorities.

Table 2

CANADA

UNIVERSITY UNDERGRADUATE DEGREES AND CERTIFICATES AWARDED BY SEX AND FIELD OF STUDY: 1970, 1975, 1980, 1982

Field of Study	1970			1975			1980			1982		
	No. of Awards	F (%)	M	No. of Awards	F (%)	M	No. of Awards	F (%)	M	No. of Awards	F (%)	M
Education	13 956	53.9	46.1	22 684	58.0	42.0	21 683	67.8	32.2	22 413	70.7	29.3
Fine/Applied Arts	1 250	67.0	33.0	2 345	61.1	38.9	2 948	65.3	34.7	3 119	65.0	35.0
Humanities	10 000	47.5	52.5	10 469	55.2	44.8	10 328	60.7	39.3	10 143	62.1	37.9
Social Sciences	14 965	26.5	73.5	23 753	35.2	64.8	30 693	42.5	57.5	34 582	46.0	54.0
Agriculture/Biological Sciences	3 557	36.5	63.5	5 199	45.2	54.8	5 583	49.9	50.1	5 114	52.2	47.8
Engineering/Applied Sciences	4 280	1.5	98.5	5 274	2.6	97.4	7 835	7.6	92.4	7 928	9.1	90.9
Health Professions	4 668	61.9	38.1	5 916	58.5	41.5	7 000	64.5	35.5	6 790	65.8	34.2
Mathematics/Physical Sciences	3 690	17.4	82.6	4 131	21.7	78.3	4 517	28.6	71.4	5 149	28.5	71.5
Unclassified	9 372	45.4	54.6	8 870	47.8	52.2	7 508	57.0	43.0	7 873	57.7	42.3
Total	65 738	39.9	60.1	88 641	44.9	55.1	98 095	50.4	49.6	103 131	52.3	47.7

(F + M = 100 per cent)

Source: Universities: Enrolment and Degrees, 1982 Statistics Canada, No.81-204, Table 17.

Table 3

CANADA

UNIVERSITY GRADUATE DEGREES AND CERTIFICATES AWARDED BY SEX AND FIELD OF STUDY: 1970, 1975, 1980, 1982

Field of Study	1970			1975			1980			1982		
	No. of Awards	F (%)	M	No. of Awards	F (%)	M	No. of Awards	F (%)	M	No. of Awards	F (%)	M
Education	1 854	28.4	71.6	2 779	31.9	68.1	3 385	46.7	53.3	3 438	52.6	47.4
Fine/Applied Arts	78	62.8	37.2	146	49.3	50.7	208	50.5	49.5	295	56.5	43.5
Humanities	1 883	34.7	65.3	2 429	43.3	56.7	2 111	52.6	47.4	2 107	54.9	45.1
Social Sciences	3 139	20.0	80.0	4 755	23.4	76.6	5 857	31.6	68.4	6 076	34.9	65.1
Agriculture/Biological Sciences	752	15.7	84.3	729	24.0	76.0	860	31.4	68.6	889	34.8	65.2
Engineering/Applied Sciences	1 217	1.6	98.4	1 205	3.9	96.1	1 316	6.5	93.5	1 386	7.8	92.2
Health Professions	579	26.8	73.2	692	37.3	62.7	884	52.1	47.9	966	49.5	50.5
Mathematics/Physical Sciences	1 328	6.3	93.7	1 235	11.1	88.9	1 124	14.7	85.3	1 125	17.3	82.7
Unclassified	10	30.0	70.0	50	24.0	76.0	46	39.1	60.9	47	44.7	55.3
Total	10 840	20.6	79.4	14 020	26.8	73.2	15 791	35.8	64.2	16 329	38.9	61.1

(F + M = 100 per cent)

Source: Universities: Enrolment and Degrees, op.cit. Table 17.

Table 1

DENMARK

PRE-PRIMARY, PRIMARY AND SECONDARY, UPPER SECONDARY, HIGHER AND FURTHER EDUCATION(1) BY SEX:
1970-71, 1973-74, 1977-78, 1981

Level of Education	1970-71			1973-74			1977-78			1981		
	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M
Pre-primary	20 900	48.3	51.7	41 356	48.5	51.5	54 981	48.6	51.4	65 235	-	-
Basic School	712 100	49.5	50.5	764 457	49.3	50.7	762 290	49.1	50.9	704 491	-	-
Upper Secondary	123 400	33.0	67.0	134 200	34.9	65.1	160 218	42.9	57.1	218 817	48.0	52.0
General	-	-	-	56 074	49.5	50.5	59 440	54.3	45.7	77 933	60.0	40.0
Vocational	-	-	-	78 126	24.3	75.7	100 778	36.2	63.8	140 884	41.0	59.0
Higher and Further	94 400	40.4	59.6	115 700	43.3	56.7	118 716	46.7	53.3	104 181	44.0	56.0
Total	950 800	46.4	53.6	1 055 700	46.8	53.2	1 096 200	47.9	52.1	1 311 541	49.0(2)	51.0(2)

1. Full-time enrolments. (F + M = 100 per cent)

2. The proportions for 1981 are estimates.

Sources: Educational Statistics: Key Figures for the Educational Sector in the 1970s, Ministry of Education, Copenhagen, Table 2; and data supplied by national authorities.

Table 2

DENMARK

STUDENTS IN UPPER SECONDARY EDUCATION BY SEX AND TYPE OF COURSE (PERCENTAGES ONLY): 1970, 1975, 1977, 1979, 1981, 1983

Type of Institution or Course	1970		1975		1977		1979		1981		1983	
	F (%)	M	F (%)	M	F (%)	M	F (%)	M	F (%)	M	F (%)	M
First to third year of the gymnasium	49	51	51	49	53	47	55	45	55	45	56	44
Two-year course leading to the upper secondary school leaving examination	44	56	48	52	53	47	56	44	53	47	54	46
Higher preparatory courses	52	48	57	43	64	46	69	31	73	27	70	30
Total	49	51	52	48	55	45	57	43	57	43	58	42

(F + M = 100 per cent)

Sources: Towards Equality -- Positive Discrimination, Documentation of the Developments of the 1970s, The Committee on Sex Roles and Education, Ministry of Education, Copenhagen, 1982, Table 13; data supplied by national authorities.

Table 3

DENMARK

DISTRIBUTION BETWEEN THE MATHEMATICS LINE AND THE LANGUAGES LINE OF THE GYMNASIUM FOR FEMALE AND MALE STUDENTS: 1970, 1977, 1979, 1981, 1983

Year	Female Students (1)		Male Students (1)		All Students (2)	
	Mathematics Line	Languages Line	Mathematics Line	Languages Line	Mathematics Line	Languages Line
1970	34	66	76	24	55	45
1977	45	55	81	19	62	38
1979	46	54	83	17	63	37
1981	49	51	84	16	64	36
1983	51	49	84	16	65	35

(Mathematics + languages = 100 per cent)

1. First year of the gymnasium.

2. All gymnasium students.

Sources: Towards Equality -- Positive Discrimination, Documentation of the Developments of the 1970s, op. cit., Table 13 and data supplied by national authorities.

Table 4

DENMARK

ENROLMENTS AND SUCCESSFUL CANDIDATES IN HIGHER AND FURTHER EDUCATION BY SEX: 1982

Type of Education and Institution	Enrolments			Successful Candidates (1)		
	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M
Universities	47 228	42	58	3 530	36	64
Institutions of Higher Education	31 995	38	62	4 420	44	56
Technical University of Denmark	3 866	9	91	416	6	94
Danish Academy of Engineers	1 580	18	82	222	10	90
Royal Danish Veterinary and Agricultural or University	2 216	37	63	247	36	64
Dental Colleges	1 198	63	37	199	56	44
Royal Danish School of Pharmacy	745	68	32	68	65	35
Colleges of Economics, Business Administration, Modern Language	16 289	40	60	2 486	52	48
Schools of Architecture	1 962	36	64	238	21	79
Academies of Music	825	43	57	158	44	56
Danish School of Librarianship	873	73	27	261	72	28
Royal Danish School of Educational Studies	2 219	45	55	43	44	56
State Institute for Physical Education	222	46	54	82	51	49
Other Further Education	25 214	55	45	6 934	65	35
Teacher Training Colleges	9 542	41	59	2 738	59	41
Engineering Colleges	3 531	3	97	648	3	97
Schools of Social Work	884	75	25	285	73	27
Schools of Physical Therapy	1 082	85	15	292	82	18
College for Home Economics Teachers	316	92	8	84	96	4
Schools for Midwifery	151	99	1	32	100	0
Danish School of Journalism	442	35	65	157	31	69
Kindergarten Teacher Training College	4 765	92	8	1 420	93	7
Recreation-Centre Teacher Training College	1 716	67	33	512	68	32
State College of Social Educational Training	2 785	77	23	766	78	22

(F + M = 100 per cent)

1. 1981-82.

Source: Data supplied by national authorities.

Table 5

DENMARK

STUDENTS IN BASIC TECHNICAL EXAMINATION COURSES (1) IN THE PRINCIPAL INDUSTRIAL BRANCHES
BY SEX AND BRANCH: 1975, 1977, 1979, 1981

Industrial Branch	1975			1977			1979			1981		
	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M
Commerce (e.g. data processing assistant) Higher Commercial Examination	3 028	37	63	4 699	62	38	6 115	52	48	11 723	54	46
Metal Industries (e.g. technical assistant)	1 771	28	72	2 112	33	67	2 265	35	65	2 699	36	64
Chemical Engineering (e.g. laboratory assistant)	1 182	70	30	1 214	74	26	875	77	23	869	77	23
Construction (e.g. building technician workshop training)	152	11	89	176	14	86	210	8	92	274	15	85
Graphic Industries (e.g. draughtsman)	338	68	32	499	71	29	665	74	26	875	76	24
Services (e.g. sales assistant -- clothing, industrial designer)	70	73	27	124	80	20	169	82	18	158	81	19
Transport and Communication (e.g. marine engineer's assistant, radio operator)	-	-	-	467	16	84	387	23	77	483	19	81
Health Service (e.g. assistant nurse, mental hospital nurse)	1 486	86	14	2 228	92	8	2 315	93	7	3 052	95	5

(F + M = 100 per cent)

1. Medium length courses in technical education.

Sources: Towards Equality -- Positive Discrimination, Documentation of the Developments of the 1970s, op. cit. Table 19; and data supplied by national authorities.

Table 1

FINLAND

PRIMARY, SECONDARY AND HIGHER EDUCATION BY SEX: 1965, 1970, 1975, 1981, 1983

Level of Education	1965			1970			1975			1981			1983		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Comprehensive, -Primary and junior secondary(1)	544.0(2)	47.1	52.9	417.0(2)	47.0	53.0	698.6	49.5	50.5	590.1	49.0	51.0	573.9	49.0	51.0
Senior secondary	268.0(3)	56.5	43.5	323.6(3)	55.1	44.9	92.7	59.3	40.7	111.9	61.1	38.9	112.0	61.6	38.4
Folk high schools	7.8(1)	75.4	24.6	6.6	72.2	27.8	4.9	76.4	23.6	6.7	79.4	20.6	7.0	78.9	21.1
Vocational education	77.0	37.9	62.1	105.1	43.4	56.6	123.3	45.8	54.2	144.5	46.5	53.5	149.9(4)	48.2	51.8
-Second stage of second level	-	-	-	-	-	-	101.8	45.5	54.5	121.3	45.8	54.2	119.4	50.0	50.0
-Third level							21.5	47.7	52.3	23.2	50.0	50.0	15.5	38.1	61.9
University(1)	42.2	49.2	50.8	58.7	47.6	52.4	75.8	49.0	51.0	86.0	50.2	49.8	88.2	50.4	49.6

(F + M = 100 per cent)

1. Autumn term.
2. Primary schools.
3. General secondary schools.
4. Includes students in first year of basic line of vocational education.

Sources: Statistical Yearbook of Finland (SYF) 1966: Tables 336, 337; SYF 1971: Tables 330, 335, 337; SYF 1976: Tables 297, 298, 306; SYF 1982: Tables 325, 326, 328, 331; SYF 1984: Tables 333, 334, 336, 338, 343.

Table 2

FINLAND

STUDENTS WITH THE MATRICULATION EXAMINATION BY SEX:
1960, 1965, 1970, 1975, 1980, 1984

Year	Total No. of Students	F (%)	M
1960	7 666	56.2	43.8
1965	13 444	56.2	43.8
1970	18 280	58.8	41.2
1975	24 828	59.8	40.2
1980	28 692	62.4	37.6
1984	31 881	61.8	38.2

Sources: "The Position of Women", Table 9, p.26 and General Secondary Education, Official Statistics of Finland IX, Statistical Yearbook of Finland. CSO, Division of Education Statistics. Statistical Yearbook of Finland 1984, Table 334, CSO, Statistical report 1985:2 p.38 CSO.

Table 3

FINLAND

STUDENTS COMPLETING STUDIES IN VOCATIONAL POST-SECONDARY INSTITUTIONS
BY SEX AND FIELD OF STUDY: 1981 AND 1984

Field of Study	1981			1984		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Humanities, Fine and Applied Arts	1 092	90.8	9.2	1 050	91.2	8.8
Teacher Education	1 199	81.5	18.5	1 228	81.3	18.7
Commercial and Office Programmes	10 646	70.6	29.4	12 339	72.6	27.4
Trade, Craft, Engineering and Natural Sciences	25 587	15.1	84.9	23 997	15.8	84.2
Transport and Communication	1 439	28.9	71.1	1 269	32.4	67.6
Health and Health-Realted Programmes	7 315	94.5	5.5	8 718	93.2	6.8
Agriculture and Forestry	5 645	21.9	78.1	5 103	31.8	68.2
Other Specialised Education	15 705	81.9	18.1	16 169	82.6	17.4
Total	68 628	50.7	49.3	69 873	55.0	45.0

(F + M = 100 per cent)

Sources: Statistical report KO 1982:2 p.4, and 1985:8 p.4, CSO.

Table 4

FINLAND

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX AND FIELD OF STUDY: 1970, 1975, 1980, 1984

a) 1970-80

Field of Study	1970			1975			1980		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Theology	1 243	45.1	54.9	1 167	36.4	63.6	1 444	40.4	59.6
Law	2 762	29.9	70.1	2 954	35.5	64.5	3 986	40.9	59.1
Medicine	3 015	37.1	62.9	4 298	46.9	53.1	4 448	56.4	43.6
Veterinary Medicine	165	35.7	64.3	221	43.0	57.0	252	68.2	31.8
Agriculture and Forestry	1 305	42.7	57.3	1 639	45.8	54.2	2 185	46.9	53.1
Physical / Health Education	548	51.4	48.6	438	60.5	39.5	388	55.9	44.1
Engineering	7 216	7.8	92.2	10 508	13.8	86.2	13 263	15.1	84.9
Business Economics	6 126	45.7	54.3	9 030	48.4	51.6	9 661	43.3	56.5
Teacher Training	-	-	-	4 637	67.5	32.5	4 651	68.0	32.0
Education Sciences	-	-	-	2 205	74.7	25.3	3 156	77.9	22.1
Social Sciences	9 719(?)	43.5	56.6	7 753	47.3	52.7	6 394	51.9	48.1
Humanities	15 288	77.6	22.4	14 217	74.8	25.2	15 133	73.4	26.6
Mathematics and Natural Sciences	10 706	42.1	57.9	13 435	44.1	55.9	13 927	46.1	53.9
Other, mainly Social Sciences	-	-	-	2 056	58.1	41.9	2 271	66.4	33.6
TOTAL	57 093	47.5	52.5	74 558	49.1	50.9	81 159	49.7	50.3

b) 1984

Field of Study	No. of Students	F (%)	M
Theology	1 643	47.0	53.0
Humanities	16 353	75.4	24.6
Industrial Arts	863	62.5	37.5
Music	942	53.7	46.3
Theatre and Drama	140	45.0	55.0
Pedagogics	8 063	70.9	29.1
Physical Education	498	53.6	46.4
Social Sciences	8 977	56.4	43.6
Psychology	1 148	72.5	27.5
Public Health	317	95.6	4.4
Law	3 973	40.0	60.
Economics and Business	9 166	43.0	57.0
Natural Sciences	13 011	44.0	56.0
Agriculture/Forestry	2 520	45.7	54.3
Technology/Engineering	14 870	15.3	84.7
Medicine	3 511	57.4	42.6
Dentistry	1 025	69.4	30.6
Veterinary Sciences	283	74.9	25.1
Pharmacy	947	87.3	12.7
TOTAL	88 250	50.8	49.2

(F + M = 100 per cent)

1. The education of comprehensive school teachers is arranged at the universities as from 1973-75.
2. Includes the students at the Faculty of Economics and Administration of the University of Tampere, at the Faculties of Social Sciences and of Education at the University of Jyväskylä, and at the Faculty of Education at the University of Joensuu.

Source: Ministry of Education, Department for Higher Education and Research, 1981; Statistical Report KO 1984:19.

Table 1

FRANCE (1)

PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION
BY SEX AND LEVEL OF EDUCATION(2): 1970-71, 1980-81, 1982-83

Level of Education	1970-71			1980-81			1982-83		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	2 231.3	48.9	51.1	2 383.5	48.8	51.2	2 406.4	48.7	51.3
Primary	5 147.3	48.5	51.5	4 726.2	48.3	51.7	4 385.5	48.6	51.4
First Cycle Secondary	2 801.6	50.9	49.1	3 249.3	50.2	49.8	3 199.7	50.5	49.5
Pre-vocational (CPPN-CPA)	7.5	45.6	54.4	187.4	37.8	62.2	169.0	37.5	62.5
Second Cycle Secondary-short	645.8	49.4	50.6	773.2	47.7	52.3	805.3	47.7	52.3
Second Cycle Secondary-long(3)	852.5	52.8	47.2	1 104.4	57.9	42.1	1 127.3	56.5	43.5
Post-secondary Preparation for the Grandes Ecoles(CPGE)	31.2	24.8	75.2	37.1	31.1	68.9	41.9	30.9	69.1
High Level Technician Education (STS)	26.8	50.3	49.7	55.2	56.9	43.1	78.6	54.5	45.5
Universities	661.2	44.5	55.5	858.1	49.8	50.2	898.5	51.0	49.0

(F + M = 100 per cent)

1. Continental France and Corsica.

2. Public and private.

3. Includes preparation for technical studies for industry (TI).

Sources: Data supplied by national authorities; Repères et Références Statistiques sur les Enseignements et la Formation, SIGES, Paris, (1984 ed.), p. 97 Table 3, p. 105 Table 1, p. 119 Table 1, p. 123 Table 1, p. 131 Table 1, p. 143 Table 3, p. 169 Table 2.

Table 2

FRANCE

STUDENTS ATTAINING TECHNICAL QUALIFICATIONS BY SEX AND TYPE OF QUALIFICATION: 1971, 1976, 1980, 1982

Qualification	1971			1976			1980			1982		
	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M
Certificat d'Aptitude Professionnelle (CAP)												
- National Certificate	175 097	40.8	59.2	204 356	41.1	58.9	234 275	41.5	58.5	259 723	42.1	57.9
- Departmental Certificate	1 699	18.5	81.5	1 541	18.1	81.9	771	10.2	89.8	622	15.8	84.2
Brevet d'Etudes Professionelles(BEP)	30 604	58.0	42.0	65 165	55.3	44.7	78 905	52.9	47.1	97 474	53.5	46.5
Brevet Professionnel National (1)	12 080	36.3	63.7	16 260	37.6	62.4	14 564	40.6	59.4	12 215	43.9	56.1
Brevet de Technicien	6 226	57.8	42.2	3 993	25.7	74.3	4 521	23.0	77.0	6 022	25.0	75.0
Baccalauréat de technicien	32 823	47.1	52.9	50 856	58.2	41.8	62 660	58.4	41.6	73 798(2)	58.1	41.9
Brevet de Technicien Supérieur	9 906	51.5	48.5	13 200	55.1	44.9	17 442	56.0	44.0	21 389	57.3	42.7

(F + M = 100 per cent)

1. Prepared through formation continue (recurrent education).

2. 1983. See France Table 4.

Sources: Tableaux des Enseignements et de la Formation, Ministère de l'Education Nationale. 1971: 1973 edition p.191; 1976: 1978 edition p.137; 1980: 1982 edition p.127; 1982: l'Education Nationale en Chiffres, SIGES, 1983.

Table 3

FRANCE

STUDENTS AHEAD, ON SCHEDULE, OR BEHIND IN UPPER (LONG-CYCLE) SECONDARY EDUCATION BY SEX AND TYPE OF INSTITUTION: 1977-78, 1982-83

Type of Institution	1977-78						1982-83					
	Seconde		Première		Terminale		Seconde		Première		Terminale	
	F	M	F	M	F	M	F	M	F	M	F	M
	(%)		(%)		(%)		(%)		(%)		(%)	
Public												
1 year ahead	7.8	7.3	7.2	6.1	7.5	6.3	5.8	5.4	5.9	5.2	5.2	4.6
"On schedule"	54.0	46.8	50.9	41.7	44.6	35.0	56.0	50.8	51.4	43.4	43.2	35.7
1 year behind	32.8	36.6	33.4	36.6	35.2	37.8	32.0	33.9	31.7	34.6	35.9	36.9
2 years behind	5.1	7.7	7.6	12.6	11.1	17.1	6.2	9.9	11.0	16.8	15.7	22.8
Private												
1 year ahead	8.9	8.4	8.2	6.9	8.6	6.5	6.1	5.5	5.4	5.1	5.5	4.8
"On schedule"	46.7	41.1	43.5	36.3	38.6	30.7	48.6	43.1	41.7	35.2	36.5	29.2
1 year behind	33.7	36.8	34.0	37.4	34.9	37.5	33.5	36.5	33.3	36.2	35.6	37.3
2 years behind	9.2	11.7	11.7	15.1	14.3	19.6	11.8	14.9	19.6	23.5	22.4	28.7

Sources: Etudes et documents -- 79.2. "La Scolarité féminine dans les enseignements du premier et second degré", p.58; Repères et Références Statistiques sur les Enseignements et la Formation op.cit., p.133, Table 1.

Table 4

FRANCE (1)

STUDENTS ATTAINING THE BACCAULAREAT BY SEX, TYPE OF BACCALAUREAT AND SUBJECT: 1972, 1976, 1981, 1983

Type of Baccalauréat and Subject	1972			1976			1981			1983		
	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M	No. of Successful Students	F (%)	M
A-Philosophy/Letters	59 404	72.4	27.6	45 593	76.4	23.6	42 609	79.6	20.4	45 108	80.1	19.9
B-Economic and Social Studies	15 494	55.8	44.2	21 563	62.1	37.9	34 237	65.0	35.0	39 287	63.0	37.0
C-Mathematics and Physical Sciences	26 861	32.7	67.3	32 738	37.0	63.0	32 321	39.5	60.5	31 566	37.3	62.7
D-Mathematics and Natural Sciences	39 333	53.7	46.3	44 837	55.0	45.0	45 356	57.1	42.9	50 071	56.4	43.6
D'-Agronomy	1 038	22.8	77.2	1 180	22.2	77.8	1 223	25.6	74.4	1 434	28.9	71.1
E-Mathematics and Technical Sciences	5 222	2.0	98.0	5 333	3.6	96.4	5 643	4.0	96.0	5 960	4.1	95.9
Total	147 352	55.6	44.4	151 244	56.5	43.5	161 389	59.1	40.9	174 361(2)	58.5	41.5
Technical baccalauréat												
F-Industrial and Paramedical branch	13 736	11.3	88.7	19 656	28.4	71.6	26 189	31.9	68.1	29 740	33.1	66.9
G-Economic branch	22 622	72.7	27.3	30 749	77.4	22.6	36 436	76.2	23.8	43 054	75.6	24.4
FII -- Music	.	.	.	.	.	.	273	57.1	42.9	303	63.0	37.0
H-Computer Sciences	486	33.7	66.3	451	47.9	52.1	491	40.7	59.3	701	37.1	62.9
Total	36 844	49.3	50.7	50 856	58.2	41.8	63 389	57.5	42.5	73 798	58.1	41.9

(F + M = 100 per cent)

1. Continental France and Corsica.

2. Includes 935 successful students in the experimental baccalauréat.

Sources: Tableaux de l'Education nationale, Ministère de l'Education nationale. 1972: 1973 ed. pp.204, 206; 1976: 1977 ed. pp.160, 162; 1981: 1982 ed. pp.145, 147; 1983: Le Baccalauréat: Session 1983 Statistiques Définitives, Note d'information SIGES, Paris, No.84-11.

Table 5

FRANCE

STUDENTS ENROLLED IN UNIVERSITIES BY SEX AND FIELD OF STUDY: 1970-71, 1974-75, 1980-81, 1982-83

Field of Study	1970-71			1974-75			1980-81			1982-83 (1)		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Law	(2)			114 571	43.8	56.2	132 881	50.5	49.5	134 194	52.4	47.6
Economic Sciences	149 675	35.1	64.9	57 695	30.0	70.0	72 845	39.9	60.1	81 578	42.4	57.6
Letters	229 140	64.4	35.6	241 267	66.0	34.0	259 174	66.8	33.2	272 882	67.8	32.2
Sciences	137 297	33.5	66.5	118 296	34.0	66.0	139 106	33.0	67.0	151 680	32.9	67.1
Medicine	(3)			132 827	37.9	62.1	137 858	42.1	57.9	136 171	43.8	56.2
Dentistry	93 612	30.6	69.4	10 797	29.4	70.6	11 903	35.3	64.7	11 375	36.4	63.6
Pharmacy	22 259	57.0	43.0	30 003	59.5	40.5	37 507	61.3	38.7	37 645	61.7	38.3
Multi-disciplinary	-	-	-	9 815	49.4	50.6	13 144	51.8	48.2	24 733	59.2	40.8
University Institutes of Technology	29 461	22.9	77.1	41 125	30.8	69.2	53 667	36.2	63.8	54 934	37.6	62.4
Total	665 444	44.2	55.8	756 596	47.0	53.0	858 085	49.7	50.3	905 192	51.1	48.9

(F + M = 100 per cent)

1. Includes overseas territories.

2. Included in Economic Sciences.

3. Included in Dentistry.

Sources: Data supplied by national authorities. SIGES statistics reported in "Les Métiers n'ont pas de Sexe" Campagne Nationale d'Information sur l'Orientation des Filles, Ministère des Droits de la Femme, 1984, p.9.

Table 1

GERMANY

SCHOOL-LEAVERS BY SEX AND QUALIFICATION: 1970, 1975, 1980, 1983

Type of Qualification	1970			1975			1980			1983		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Completed compulsory full-time	489.1	47.9	52.1	461.6	45.9	54.1	500.8	44.1	55.9	449.8	43.9	56.1
without main certificate	140.3	44.5	55.5	114.6	40.8	59.2	109.4	38.1	61.9	90.8	39.1	60.9
with main certificate	348.8	49.3	50.7	347.1	47.4	52.6	391.4	45.8	54.2	359.0	45.2	54.8
Intermediate certificate	200.1	51.6	48.4	318.0	54.7	45.3	422.2	55.4	44.6	443.2	54.9	45.1
from general schools	143.9	52.5	47.5	231.8	54.7	45.3	327.7	54.7	45.3	354.3	53.8	46.2
from vocational schools	56.2	49.3	50.7	86.2	54.6	45.4	94.5	58.8	41.2	88.9	59.4	40.6
Fachhochschule Entrance Qualification	4.3	-	-	48.8	-	-	53.2	-	-	79.8	-	-
from general schools	-	-	-	4.3	-	-	4.5	50.3	49.7	6.5	54.5	45.5
from vocational schools	4.3	-	-	44.5	-	-	48.7	37.9	62.1	73.3	36.9	63.1
University/College Entrance Qualification	87.2	-	-	126.2	-	-	168.5	-	-	225.5	-	-
from general schools	83.5	39.7	60.3	115.4	45.7	54.3	155.1	48.1	51.9	207.6	49.7	50.3
from vocational schools	3.7	35.3	64.7	10.8	40.7	59.3	13.4	39.6	60.4	17.9	43.0	57.0

(F + M = 100 per cent)

Source: Basic and Structural Data 1984/85, Federal Ministry of Education and Science, Bonn, (English edition). pp.32-35.

Table 2

GERMANY

APPRENTICESHIPS UNDER THE DUAL SYSTEM: THE EIGHT OCCUPATIONAL SECTORS WITH MOST A)FEMALE B)MALE TRAINEES: 1983

Occupational Sector	No. of Trainees	F (%)	M
A) Female			
Hairdresser	66 165	94.5	5.5
Salesperson(Stage 1)	78 782	76.3	23.7
Salesperson in food industry	45 419	98.9	1.1
Office clerk	49 542	81.9	18.1
Doctor's receptionist	39 181	99.9	0.1
Industrial clerk	57 014	63.4	36.6
Bank clerk	51 683	54.3	45.7
Dentist's receptionist	27 348	99.9	0.1
B) Male			
Motor mechanic	80 695	0.9	99.1
Electrical fitter	56 618	0.7	99.3
Machine fitter	47 687	1.3	98.7
Joiner	41 111	5.9	94.1
Painter and varnisher	39 754	9.1	90.9
Bricklayer	34 477	0.2	99.8
Gas and water fitter	33 286	0.7	99.3
Baker	30 330	11.0	89.0

(F + M = 100 per cent)

Source: Basic and Structural Data 1984/85, op.cit., pp.43-45.

Table 3

GERMANY

STUDENTS (1) ENROLLED IN HIGHER EDUCATION BY SEX AND LINE OF STUDY: 1975, 1979, 1983

Line of Study	1975			1979			1983		
	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M
Languages, Arts and Physical Education	225 374	55.4	44.6	247 385	56.2	43.8	294 995	59.0	41.0
Economics and Social Sciences	194 910	27.9	72.1	244 425	33.3	66.7	340 721	37.4	62.6
Mathematics, Natural Sciences	139 365	32.0	68.0	152 854	33.5	66.5	193 511	33.2	66.8
Engineering	163 297	7.2	92.8	178 132	8.5	91.5	252 771	11.1	88.9
Human Medicine(2)	53 128	28.7	71.3	73 912	33.4	66.6	91 135	38.5	61.5
Veterinary Medicine	3 497	34.9	65.1	4 680	40.6	59.3	6 170	50.4	49.6
Agricultural Science, Forestry, Nutrition	18 329	45.2	54.8	27 059	44.9	55.1	32 783	46.2	53.8
Art	42 927	53.3	46.7	50 282	54.2	45.8	60 863	56.6	43.3
Total	840 757	33.7	66.3	983 575(3)	36.0	64.0	1 273 168(3)	37.9	62.1

(F + M = 100 per cent)

1. Home and foreign students.
2. Including dentistry.
3. Includes small number of students in miscellaneous courses not otherwise counted.

Source: Basic and Structural Data 1984/85. Federal Ministry of Education and Science, Bonn, pp.66-67.

Table 4

GERMANY

HIGHER EDUCATION EXAMINATIONS PASSED BY TYPE OF QUALIFICATION, SUBJECT AND SEX: 1973, 1977, 1980, 1982

	1973(1)			1977(1)			1980(1)			1982(1)		
a) Diplomas First State Examinations(2)	No. of Passes (000's)	F (%)	M	No. of Passes (000's)	F (%)	M	No. of Passes (000's)	F (%)	M	No. of Passes (000's)	F (%)	M
Languages, Arts, Sport	3.8	34.2	65.8	6.3	46.0	54.0	7.1	49.3	50.7	7.7	49.4	50.6
Economics and Social Sciences	10.3	11.7	88.3	11.9	16.8	83.2	14.1	25.5	74.5	14.7	27.2	72.8
Mathematics/Natural Sciences	5.4	20.4	79.6	6.1	21.3	78.7	6.5	24.6	75.4	8.1	29.6	70.4
Engineering	4.4	4.5	95.5	5.8	5.2	94.8	6.7	6.0	94.0	7.1	7.0	93.0
Human and Veterinary Medicine	6.7	23.9	76.1	5.3	22.6	77.4	9.0	28.9	71.1	9.2	31.5	68.5
Total(3)	32.3	18.3	81.7	37.5	22.7	77.3	46.3	28.3	71.7	50.6	30.0	70.0
b) Doctoral degrees	10.1	15.8	84.2	11.4	15.8	84.2	12.2	19.7	80.3	13.0	20.8	79.2
c) Teaching qualification(4)	30.0	54.3	45.7	40.4	54.0	46.0	28.9	57.1	42.9	27.8	58.3	41.7
d) Diplomas at Fachhochschulen	29.2	13.0	87.0	33.3	24.9	75.1	34.7	26.5	73.5	39.7	32.0	68.0

(F + M = 100 per cent)

1. Winter and following summer semester.

2. Not including teaching qualifications.

3. Including all passes in other subjects.

4. At first state examination level.

Source: Basic and Structural Data, 1984/85, op.cit., pp.78-79.

Table 1

GREECE

PRE-PRIMARY, PRIMARY, SECONDARY, AND HIGHER EDUCATION BY SEX:
1970-71, 1979-80, AND 1980-81

Level of Education	1970-71			1979-80			1980-81		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	87.1	48.5	51.5	142.4	48.4	51.6	145.9	48.8	51.2
Primary	920.0	47.8	52.2	899.5	48.1	51.9		48.3	51.7
Secondary: Compulsory General(1)	.	.	.	411.3	47.9	52.1	429.4	47.7	52.3
Secondary: Post-Compulsory									
General	456.4	47.7	52.3	207.4	52.2	47.8	210.3	53.8	46.2
Technical and Professional	117.0	19.5	80.5	106.6	18.7	81.3	100.4	19.9	80.1
Higher									
University	72.3	31.0	69.0	84.5	39.1	60.9	85.7	42.4	57.6
Non-university	13.5	34.0	66.0	34.0	36.2	63.8	-	-	-

(F + M = 100 per cent)

1. The secondary school system was reformed in the mid-1970s with the introduction of junior high schools, at which attendance became compulsory in 1979.

Sources: Data supplied by national authorities; Statistical Yearbook of Greece 1983, National Statistical Service of Greece, Athens, Tables VI: 4, 5, 7, 10, 12.

Table 2

GREECE

MIDDLE LEVEL (UPPER SECONDARY) TECHNICAL AND VOCATIONAL EDUCATION
BY TYPE OF INSTITUTION AND SEX: 1981-82

Type of Institution	Total No. of Students	F (%)	M (%)
Technical Lycées	34 986	10.5	89.5
Public	34 462	10.5	89.5
Private	524	9.5	90.5
Vocational Lycées	31 286	60.5	39.5
Public	30 947	60.7	39.3
Private	339	44.0	56.0
New Type Lycées -- Technical and Vocational	20 912	10.0	90.0
Public	11 853	8.0	92.0
Private	9 059	12.6	87.4
Lower Technical Schools	8 173	0.9	99.1
Public	5 129	0	100
Private	3 044	2.5	97.5
Total	95 357	26.0	74.0
Public	82 391	28.3	71.7
Private	12 966	10.9	89.1

(F + M = 100 per cent)

Source: Data supplied by national authorities.

Table 3

GREECE

NON-UNIVERSITY HIGHER TECHNICAL AND VOCATIONAL EDUCATION BY SEX:
1970-71, 1973-74, 1977-78, 1981-82

Year	Total No. of Students	F (%)	M
1970-71	9 578	28.2	71.8
1973-74	12 528	27.5	72.5
1977-78	23 716	31.2	68.8
1981-82(1)	21 904	38.2	61.8

(F + M = 100 per cent)

1. Public institutions only.

Source: Data supplied by national authorities.

Table 4

GREECE

NON-UNIVERSITY HIGHER TECHNICAL AND VOCATIONAL EDUCATION(1)
BY SUBJECT AND SEX: 1981-82

Subject	Total No. of Students	F (%)	M
Applied Technology and Engineering	10 386	17.8	82.2
Food Technology	832	45.0	55.0
Agriculture, Forestry and Fisheries	1 679	39.2	60.8
Commerce and Business -- Middle Level Staff	5 559	55.4	44.6
Paramedical and Social Services	2 838	72.8	27.2
Graphic Arts	610	54.6	45.4
Total	21 904	38.2	61.8

(F + M = 100 per cent)

1. Public institutions only.

Source: Data supplied by national authorities.

Table 1

IRELAND

PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION BY SEX: 1965, 1970, 1976, 1980, 1983-84

Level of Education	1965			1970			1976			1980			1983-84		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	119.4	48.9	51.1	130.3	48.6	51.4	141.4	48.7	51.3				147.0	48.7	51.3
Primary	381.4	49.2	50.8	389.6	49.1	50.9	406.4	48.7	51.3	557.9(1)	48.8(1)	51.2(1)	428.5	48.6	51.4
Compulsory secondary	110.0	50.1	49.9	152.2	48.9	51.1	190.8	48.8	51.2	199.7	48.7	51.3	208.4	49.0	51.0
Non-compulsory secondary	33.0	52.4	47.6	56.3	56.8	43.2	90.3	56.8	43.2	100.9	57.4	42.6	116.1	55.5	44.5
Higher	20.7	29.5	70.5	26.2	34.0	66.0	35.0	39.7	60.3	41.9	43.6	56.4	49.8	45.3	54.7
University	-	28.1	71.9	-	29.6	70.4	-	41.2(2)	58.8(2)	23.2	45.7	54.3	25.2	48.4	51.6
Non-university	-	34.0	66.0	-	35.6	64.4	-	37.6	62.4	18.7	41.0	59.0	24.6	42.1	57.9

(F + M = 100 per cent)

1. Includes Pre-primary and Primary.

2. 1975.

Sources: Data supplied by national authorities; An Roinn Oideachais, Tuarascail Staitistical 1983-84.

Table 2

IRELAND

SECONDARY EDUCATION BY SEX AND TYPE OF SCHOOL 1973-74, 1980-81, 1983-84

Type of School	1973-74			1980-81			1983-84		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
1st Cycle general	166.3	48.9	51.1	199.7	48.7	51.3	208.4	49.0	51.0
Secondary	11.9	56.2	43.8	132.6	56.1	43.9	134.1(1)	55.9	44.1
Secondary Tops	1.9	85.2	14.8	0.4	71.7	28.3			
Comprehensive	3.4	44.4	55.6	5.5	47.0	53.0	24.0(2)	44.1	55.9
Community Schools	0.7	40.2	59.8	13.2	41.7	58.3			
Vocational (general)	48.1	31.2	68.8	47.9	30.3	69.7	50.3	32.8	67.2
2nd Cycle general	64.9(3)	56.9	43.1	100.9(3)	57.4	42.6	100.1	53.5	46.5
Secondary	49.5	55.1	44.9	68.0	57.8	42.2	74.8(1)	56.9	43.1
Secondary Tops	0.4	97.1	2.9	(0.09)	100	(0)			
Comprehensive	1.1	52.8	47.2	2.3	53.0	47.0	9.2(2)	48.4	51.6
Community Schools	(0.05)	50.5	49.5	4.3	49.2	50.8			
Vocational (general)	0.5	33.8	66.2	11.7	42.7	57.3	16.0	40.2	59.8
Other (general)	4.3	98.6	1.4	6.9	99.2	0.8		92.4	7.6
Vocational education (all schools)	0.5	38.8	61.2	1.8	51.3	48.7	16.0	68.3	31.7

(F + M = 100 per cent)

1. Includes secondary tops (secondary-level courses offered in primary National Schools).

2. Includes community schools.

3. Includes other institutions not specified below.

Sources: An Roinn Oideachais, Tuarascail Staitistical, 1973-74 and 1983-84.

Table 3

IRELAND

STUDENTS STUDYING FOR THE INTERMEDIATE CERTIFICATE
BY SEX AND SUBJECT: 1980-81, 1983-84

Subject	1980-81			1983-84		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Irish (higher course)	88 777	54.2	45.8	85 893	54.7	45.3
Irish (lower course)	84 527	42.8	57.2	91 097	44.5	55.5
Irish (combined higher and lower)	22 665	49.2	50.8	28 810	46.3	53.7
English (higher course)	101 677	53.7	46.3	99 820	54.2	45.8
English (lower course)	71 873	41.3	58.7	77 347	43.4	56.6
English (combined higher and lower)	23 468	49.3	50.7	29 030	46.0	54.0
Mathematics (higher course)	87 596	51.4	48.6	84 969	51.6	48.4
Mathematics (lower course)	87 648	45.5	54.5	94 132	47.5	52.5
Mathematics (combined higher and lower)	22 833	48.6	51.4	28 379	46.0	54.0
History and Geography	182 429	50.3	49.7	190 017	50.3	49.7
Latin	17 252	26.6	73.4	12 111	24.2	75.8
Greek	217	4.1	95.9	201	7.5	92.5
Hebrew	37	64.9	35.1	29	58.6	41.4
French	140 016	55.5	44.5	148 255	55.8	44.2
German	12 684	71.5	28.5	12 630	72.1	27.9
Spanish	7 479	58.9	41.1	5 862	53.3	46.7
Italian	655	79.7	20.3	332	51.8	48.2
Science A	127 322	41.9	58.1	147 394	45.0	55.0
Science B	21 243	30.7	69.3	19 381	29.9	70.1
Science (common course)	10 415	51.2	48.8	10 619	47.7	52.3
Home Economics	72 529	95.7	4.3	80 207	94.2	5.8
Music and Musicianship	45 418	68.5	31.5	51 213	68.4	31.6
Art	88 651	58.8	41.2	96 734	58.8	41.2
Woodwork	51 466	2.9	97.1	54 742	4.2	95.8
Metalwork	35 811	2.1	97.9	37 295	3.4	96.6
Mechanical Drawing	61 866	3.9	96.1	72 676	7.5	92.5
Commerce	115 969	58.5	41.5	127 761	58.0	42.0
Civics	181 238	49.7	50.3	183 836	49.8	50.2
Physical Education	169 204	52.2	47.8	176 614	52.2	47.8
Humanities (1)	3 577	37.4	62.6	3 274	31.5	68.5
Environmental Studies (1)	3 404	45.6	54.5	4 055	50.9	49.1
Total number in lower cycle secondary (general)	199 696	48.7	51.3	208 352	49.0	51.0

(F + M = 100 per cent)

1. Innovative courses instead of regular programmes in English, History, Geography and Civics.

Source: Tuarascail Staitistical, 1983-84, Tables 10.1 and 10.2.

Table 4

IRELAND

FULL-TIME HIGHER EDUCATION BY SEX, LEVEL AND FIELD OF STUDY: 1983-84

Field of Study	Undergraduate			Postgraduate		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Arts	6 951	63	37	689	51	49
Education	1 007	56	44	1 403	68	32
Art and Design	471	58	42	5	80	20
Economics and Social Studies	728	39	61	100	24	76
European Studies	311	64	36	6	17	83
Social Science	380	89	11	44	80	20
Communications and Information Studies	389	70	30	39	62	38
Commerce	3 166	34	66	170	24	76
Law	808	44	56	67	42	58
Science	4 071	52	48	734	36	64
Engineering	3 753	14	86	239	6	94
Architecture	173	38	62	32	34	66
Medicine	2 990	45	55	89	57	43
Dentistry	371	43	57	-	-	-
Veterinary Medicine	305	28	72	10	40	60
Agricultural Science and Forestry	523	26	74	70	17	83
Dairy Science	184	24	76	40	35	65
Total	26 581	46	54	3 737	49	51

(F + M = 100 per cent)

Source: The Higher Education Authority, Dublin.

Table 1

ITALY

PRE-PRIMARY, PRIMARY, SECONDARY AND UNIVERSITY EDUCATION BY SEX AND TYPE OF EDUCATION: 1965-66, 1970-71, 1975-76, 1980-81, 1982-83

Type of Education	1965-66			1970-71			1975-76			1980-81			1982-83		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	1 335.0	49.2	50.8	1 586.8	49.0	51.0	1 822.5	49.0	51.0	1 870.5	49.1	50.9	1 757.4	48.9	51.1
Primary	4 520.5	48.0	52.0	4 857.0	48.4	51.6	4 835.5	48.6	51.4	4 422.9	48.6	51.4	4 204.3	48.6	51.4
1st Cycle Secondary	1 795.2	45.5	54.5	2 167.5	46.7	53.3	2 778.6	47.6	52.4	2 884.8	47.7	52.3	2 849.9	47.6	52.4
2nd Cycle Secondary	1 258.8	47.7	52.3	1 656.1	41.6	58.4	2 096.6	44.3	55.7	2 423.2	48.5	51.5	2 470.0	49.5	50.5
Vocational	169.9	37.0	63.0	260.5	41.4	58.6	347.6	45.2	54.8	448.1	46.2	53.8	473.9	46.9	53.1
Technical	561.8	21.8	78.2	676.7	23.9	76.1	932.0	31.2	68.8	1 081.0	37.2	62.8	1 105.0	38.2	61.8
Teacher Training for Pre-Primary/ Primary Levels	210.6	86.7	13.3	221.4	89.2	10.8	198.4	92.3	7.7	237.5	94.0	6.0	238.1	94.0	6.0
Scientific	104.6	24.8	75.2	253.5	36.6	63.4	360.1	41.4	58.6	353.2	43.0	57.0	341.4	43.3	56.7
Classical	184.1	46.4	53.6	204.9	51.4	48.6	190.9	54.9	45.1	205.9	57.2	42.8	206.6	58.8	41.2
Languages	.	.	.	.	.	.	13.5	92.3	7.7	40.4	88.0	12.0	48.5	88.5	11.5
Arts	27.8	60.1	39.9	39.2	60.1	39.9	54.1	60.2	39.8	57.0	64.7	35.3	60.5	65.3	34.7
University: Total	402.9	33.8	66.2	681.7	37.6	62.4	935.8	39.3	60.7	1 047.9	43.2	56.8	1 022.3	45.4	54.6
Fully Enrolled in Courses	297.8	35.5	64.5	560.6	37.6	62.4	736.3	39.6	60.4	764.0	44.0	56.0	717.4	44.6	55.4

(F + M = 100 per cent)

Source: Annuario Statistico dell'Istruzione, Vol.XXXVI, Tomo I, Rome, (1984 ed.), Tables 172-177, 181-187.

Table 2

ITALY

TOTAL NUMBER OF UNIVERSITY STUDENTS BY SEX AND LINE OF STUDY:
1980-81, 1982-83

Line of Study	1980-1981			1982-83		
	Total No. of Students	F (%)	M	Total No. of Students	F (%)	M
Mathematics, Physical, Natural Sciences	106 657	52.1	47.9	106 363	50.7	49.3
Nautical Sciences	317	8.8	91.2	240	12.5	87.5
Industrial chemistry	350	18.9	81.1	328	25.6	87.5
Pharmacy	29 329	57.4	42.6	27 898	56.8	43.2
Medicine	176 054	34.6	65.4	160 240	36.9	63.1
Engineering	86 833	4.0	96.0	86 308	4.7	95.3
Architecture	56 933	30.2	69.8	58 959	32.6	67.4
Agriculture	26 952	20.1	79.9	24 751	21.2	78.8
Veterinary medicine	14 357	23.7	76.3	14 262	25.8	74.2
Economics and commerce	105 035	31.6	68.4	112 502	33.4	66.6
Economic science and banking	3 678	23.0	77.0	3 645	26.0	74.0
Social and economic science	1 001	27.2	72.8	1 205	41.2	58.8
Maritime economics	637	21.7	78.3	619	27.0	73.0
Statistics, demography and actuarial sciences	2 849	35.8	64.2	2 757	40.7	59.3
Sociology	1 495	41.3	58.7	935	43.2	56.8
Political science	36 754	34.8	65.2	35 473	36.8	63.2
Law	151 664	40.7	59.3	154 678	43.5	56.5
Letters and philosophy	109 205	69.1	30.9	109 248	74.1	25.9
Education	103 595	79.6	20.4	88 122	80.2	19.8
Foreign languages and literature	16 063	78.9	21.1	16 784	80.6	19.4
Physical education	18 116	48.2	51.8	16 965	48.8	51.2
Total	1 047 874	43.2	56.8	1 022,282	44.6	55.4

(F + M = 100 per cent)

Sources: Annuario Statistico dell'Istruzione, Vol.XXXIV, Tomo 1, 1982 edition, Table 33; and Vol. XXXVI, Tomo 1, 1984 ed., Rome.

Table 1

JAPAN

PRE-PRIMARY, PRIMARY, SECONDARY AND POST-SECONDARY ENROLMENTS BY SEX AND TYPE OF SCHOOL: 1965, 1970, 1981, 1983

Type of School	1965			1970			1981			1983		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Pre-primary	1 137.7	48.6	51.4	1 674.6	48.9	51.1	2 292.8	48.9	51.1	2 192.8	49.0	51.0
Primary	9 775.5	48.9	51.1	9 493.5	48.9	51.1	11 924.7	48.8	51.2	11 739.5	48.8	51.2
Lower Secondary	5 956.6	49.0	51.0	4 716.8	48.9	51.1	5 299.3	48.8	51.2	5 706.8	48.7	51.3
Upper Secondary	5 073.9	47.5	52.5	4 231.5	49.1	50.9	4 682.8	49.7	50.3	4 716.1	49.6	50.4
Special	44.3	44.7	55.3	50.8	43.5	56.5	94.1	39.1	60.9	94.4	38.5	61.5
Technical College	22.2	1.6	98.4	44.3	1.5	98.5	46.5	2.2	97.8	47.2	2.8	97.2
Junior College	147.6	74.8	25.2	263.2	82.7	17.3	372.4	89.6	10.4	379.4	89.9	10.1
Universities	937.6	16.2	83.8	1 406.5	18.0	82.0	1 822.1	22.1	77.9	1 834.5	22.6	77.4
Miscellaneous	1 383.7	72.8	27.2	1 352.7	69.1	30.9	660.0	52.2	47.8	605.9	48.8	51.2
Special training schools	.	.	.	.	.	.	472.8	64.0	36.0	512.2	60.3	39.7

(F + M = 100 per cent)

Sources: Ministry of Education, Science and Culture publications:

1965 and 1970: "Report on School Basic Statistics",
1981: "Provisional Report on School Basic Statistics",
1983: Statistical Abstract of Education, Science and Culture (1984 ed.)

Table 2

JAPAN

ADVANCEMENT RATE TO UPPER SECONDARY SCHOOLS, JUNIOR COLLEGES AND UNIVERSITIES BY SEX: 1955, 1960, 1965, 1970, 1975,1981, 1983

Year	Upper Secondary		Junior College		University	
	F	M	F	M	F	M
1955	47.4	55.5	2.6	1.9	2.4	13.1
1960	55.9	59.6	3.0	1.2	2.5	13.7
1965	69.6	71.7	6.7	1.7	4.6	20.7
1970	82.7	81.6	11.2	2.0	6.5	27.3
1975	93.0	91.0	19.9	2.6	12.5	40.4
1981	95.4	93.2	20.8	1.9	12.2	38.6
1983	95.2	92.8	——(F)32.2 (1)——		——(M)37.9 (1)——	

1. 1983 data combines junior college and university.

Note: Advancement rate expressed as percentage of cohort moving on to each level of education.

Sources: Ministry of Education, Science and Culture publications:

1955-1975: "Report on School Basic Statistics".
1981: "Provisional Report on School Basic Statistics".
1984: Statistical Abstract of Education, Science and Culture.

Table 3

JAPAN

UPPER SECONDARY SCHOOL STUDENTS IN REGULAR COURSES
BY SEX AND FIELD OF STUDY: 1983

Field of Study	Total No. of Students	F (%)	M
General	3 321 597	51.2	48.8
Agriculture	153 748	31.6	68.4
Technical	462 223	3.8	96.2
Commercial	557 606	70.3	29.7
Fishery	16 096	10.2	89.8
Home Economics	139 221	97.7	2.3
Health and Physical Education	26 777	99.9	0.1
Others	32 929	47.6	52.4
Total	4 710 197	49.6	50.4

(F + M = 100 per cent)

Source: Statistical Abstract of Education, Science and Culture, op.cit., pp.54-5.

Table 4

JAPAN

STUDENTS ENROLLED IN TECHNICAL SCHOOLS BY SEX: 1965, 1970, 1975, 1980, 1983

Year	Total No. of Students	F (%)	M
1965	22 208	1.6	98.4
1970	44 314	1.5	98.5
1975	47 955	1.5	98.5
1980	46 348	2.0	98.0
1983	47 245	2.8	97.2

(F + M = 100 per cent)

Source: Statistical Abstract of Education, Science and Culture, op.cit., p.68.

Table 5

JAPAN

STUDENTS ENROLLED IN JUNIOR COLLEGE REGULAR COURSES
BY SEX AND FIELD OF STUDY: 1983

Field of Study	Total No. of Students	F (%)	M
Humanities	81 507	98.2	1.8
Social Sciences	35 036	68.1	31.9
General Culture	8 008	97.9	2.1
Engineering	20 298	14.7	85.3
Agriculture	4 112	19.3	80.7
Health	18 893	88.8	11.2
Home Economics	100 912	99.9	0.1
Education and Teacher Training	85 111	99.2	0.8
Arts	19 559	93.6	6.4
Others	1 099	98.9	1.1
Total	374 535	90.0	10.0

(F + M = 100 per cent)

Table 6

JAPAN

STUDENTS ENROLLED IN UNIVERSITY UNDERGRADUATE COURSES
BY SEX AND FIELD OF STUDY: 1983

Field of Study	Total No. of Students	F (%)	M
Humanities	243 684	58.1	41.9
Social Sciences	680 141	8.5	91.5
Science	57 597	17.4	82.6
Engineering	338 990	2.3	97.7
Agriculture	59 562	13.8	86.2
Medicine and Dentistry	74 728	15.8	84.2
Other Health	41 133	60.9	39.1
Mercantile Marine	1 542	2.5	97.5
Home Economics	31 844	99.1	0.9
Education and Teacher Training	133 710	51.5	48.5
Arts	44 658	63.4	36.6
Others	22 043	28.2	71.8
Total	1 729 632	22.9	77.1

(F + M = 100 per cent)

Source: (for Tables 5 and 6) Statistical Abstract of Education, Science and Culture, op.cit., p.74.

Table 1

LUXEMBOURG

FULL-TIME PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION
BY SEX: 1970-71 AND 1981-82

Level of Education(1)	1970-71		1981-82	
	No. of Pupils (000's)	No. of Female Pupils per 100 Male Pupils	No. of Pupils (000's)	No. of Female Pupils per 100 Male Pupils
Pre-primary	8.0	99	7.6	95
1st stage (primary)	32.2	94	25.1	93
2nd stage (secondary)	20.9	94	24.5	101
Upper secondary	5.8	91	9.4	100
3rd stage (post-secondary)	0.5	41	0.7	75
Total	61.5	94	57.9	96

1. Not including students who pursue their studies abroad.

Source: School and University Education in the Community: Full-time Education,School Year 1981/82, Eurostat Statistical Bulletin 7.3.1984.

Table 2

LUXEMBOURG

SECONDARY-LEVEL TECHNICAL AND VOCATIONAL EDUCATION BY SEX, MODE OF STUDY AND SECTOR: 1970-71, 1975-76, 1980-81 AND 1982-83

Sector and Mode of Study	1970-71			1975-76			1980-81			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Public	7 827	38.1	61.9	11 539	39.1	60.9	13 728	41.5	58.5	14 391	41.1	58.9
Full-time	5 578	42.4	57.6	8 663	45.2	54.8	10 051	45.8	54.2	10 826	44.7	55.3
Part-time	2 249	27.3	72.7	2 876	20.5	79.5	3 627	30.2	69.8	3 565	30.1	69.9
Private	1 830	79.4	20.6	1 971	64.4	35.6	1 632	70.6	29.4	1 625	69.0	31.0
Full-time	1 681	83.6	16.4	1 818	69.8	30.2	1 625	71.0	29.0	1 613	69.6	30.4
Part-time	149	31.5	68.5	153	0	100	7	0	100	12	0	100

(F + M = 100 per cent)

Source: Annuaire Statistique du Luxembourg 1984/85, Statec, Luxembourg, Table S205.

Table 3

LUXEMBOURG (1)

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX AND LINE OF STUDY: 1969-70, 1975-76, 1980-81, 1982-83

Line of Study	1969-70			1975-76			1980-81(2)			1982-83(3)		
	No. of Students	F (%)	M (%)	No. of Students	F (%)	M (%)	No. of Students	F (%)	M (%)	No. of Students	F (%)	M (%)
Science (pure)	168	27.4	72.6	228	33.8	66.2	197	32.5	67.5	234	36.8	63.2
Architecture	26	11.5	88.5	37	21.6	78.4	53	32.1	67.9	58	36.2	63.8
Applied Sciences	227	0	100	303	2.0	98.0	303	4.3	95.7	347	4.0	96.0
Medical Sciences	285	29.1	70.9	575	31.8	68.2	744	37.9	62.1	725	41.0	59.0
Agriculture	29	3.4	96.6	46	19.6	80.4	33	15.2	84.8	31	12.9	87.1
Letters	362	44.5	55.5	480	54.8	45.2	400	54.0	46.0	495	59.0	41.0
Fine Arts	38	63.2	36.8	47	53.2	46.8	91	53.8	46.2	101	52.5	47.5
Education	195	48.7	51.3	279	50.9	49.1	176	46.6	53.4	139	46.0	54.0
Social Sciences	150	33.3	66.7	322	31.4	68.6	578	40.3	59.7	548	42.5	57.5
Law	121	14.0	86.0	178	27.0	73.0	172	30.8	69.2	173	32.4	67.6
Other	1	(0)	(100)	10	10.0	90.0	25	8.0	92.0	13	15.4	84.6
Total	1 602	30.0	70.0	2 505	34.5	65.5	2 771	36.7	63.3	2 864	39.2	60.8

(F + M = 100 per cent)

1. Including students pursuing their studies abroad.
2. Classification of disciplines slightly altered compared with previous years.
3. Refers only to students pursuing their studies abroad.

Sources: Informations statistiques No.94(8/80) and No.114(13/81) Ministère de l'Education nationale, Service des Statistiques, Luxembourg; Annuaire Statistique du Luxembourg 1984/85, Table S/210.

Table 1

NETHERLANDS

STUDENTS ENROLLED IN PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION BY SEX: 1970, 1975, 1980, 1982

Level of Education	1970			1975			1980			1982		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Pre-primary	491.7	48.7	51.3	518.9	48.7	51.3	409.6	48.5	51.5	398.8	48.6	51.4
Primary	1462.4	49.0	51.0	1453.5	49.1	50.9	1333.3	49.4	50.6	1201.5	49.4	50.6
Special	74.1	34.2	65.8	83.4	32.3	67.7	91.2	31.5	68.5	94.7	31.0	69.0
Secondary: Lower cycle(1)	794.8	45.6	54.4	978.8	47.7	52.3	1000.7	48.0	52.0	1007.7	47.9	52.1
general	470.2	49.1	50.9	575.9	51.0	49.0	597.9	52.9	47.1	602.6	53.5	46.5
vocational	324.7	40.7	59.3	402.9	43.0	57.0	402.7	40.6	59.4	405.1	39.5	60.5
Secondary: Upper(1)	205.6	43.7	56.3	304.8	43.8	56.2	394.3	47.0	53.0	440.0	48.2	51.8
general	121.2	41.7	58.3	190.5	45.4	54.6	225.8	49.5	50.5	233.7	50.6	49.4
vocational	84.4	46.4	53.6	114.3	41.0	59.0	168.5	43.6	56.4	206.4	45.6	54.4
Part-time vocational/upper cycle secondary	40.5	32.8	67.2	27.8	49.5	50.5	36.8	52.0	48.0	41.7	51.0	49.0
University	103.4	19.7	80.3	120.1	25.0	75.0	147.9	31.0	69.0	152.8	33.3	66.7
Vocational colleges(2)	123.9	34.6	65.4	167.9	38.1	61.9	210.5(3)	46.0	54.0	224.0	47.9	52.1

(F + M = 100 per cent)

1. Full-time.

2. Full-time and part-time.

3. Includes 300 students whose gender is not recorded in the statistics.

Sources: 1982; Zakboek Onderwijsstatistieken, Centraal Bureau voor de Statistiek, Tables 9, 24, 28, 35, 38, 41; 1984: Ibid., Tables 2.2, 3.2, 3.3, 3.4, 3.8, 3.15, 4.1, 4.2

Table 2

NETHERLANDS

VOCATIONAL SECONDARY EDUCATION BY SUBJECT AND SEX: 1980 AND 1982

Subject	1980 No. of Pupils	1980 F (%)	1980 M	1982 No. of Pupils	1982 F (%)	1982 M
a) Lower Cycle (full-time)						
Technical	201 332	4.9	95.1	209 254	5.9	94.1
Nautical	1 864	5.7	94.3	2 037	7.8	92.2
Agricultural	27 963	22.9	77.1	31 177	26.4	73.6
Domestic Science	122 648	97.4	2.6	115 046	96.4	3.6
Retail	11 055	40.0	60.0	11 973	43.0	57.0
Economics/Administration	37 860	61.6	38.4	35 615	64.8	35.2
TOTAL	402 722	40.6	59.4	405 102	39.5	60.5
b) Upper Cycle (1980)	Full-time			Part-time		
Technical	56 848	6.2	93.8	5 617	3.2	96.8
Nautical	1 709	1.4	98.6	29	0	100
Agricultural	13 174	14.5	85.5	2 031	1.9	98.1
Domestic Science	40 267	95.5	4.5	3 045	97.7	2.3
Retail	11 425	22.3	77.7	120	3.3	96.7
Economics/Administration	25 130	41.7	58.3	10 496	49.1	50.9
Socio-Pedagogical Education	9 290	84.9	15.1	11 918	61.3	38.7
Nursery School Teaching	7 190	99.0	1.0	3 493	99.5	0.51
Short Senior Vocational Training	3 454	44.3	55.7	.	.	.
TOTAL	168 487	43.6	56.4	36 751	52.0	48.0
b) Upper Cycle (1982)	Full-time			Part-time		
Technical	65 735	7.2	92.8	6 063	3.8	96.2
Nautical	2 498	1.9	98.1	.	.	.
Agricultural	15 045	16.3	83.7	2 553	6.7	93.3
Domestic Science	42 883	95.6	4.4	2 928	98.3	1.7
Retail	15 464	28.2	71.8	127	5.5	94.5
Economics/Administration	33 097	48.9	51.5	15 179	49.9	50.1
Socio-Pedagogical Education	4 866	93.6	6.4	12 225	64.0	36.0
Project Schools, Senior Domestic Science Training, Senior Socio-Pedagogic Training	11 263	83.4	6.6	.	.	.
Nursery School Teaching	8 069	98.7	1.3	2 630	99.4	0.6
Short Senior Vocational Training	7 468	43.7	56.3	.	.	.
TOTAL	206 388	45.6	54.4	41 705	51.0	49.0

(F + M = 100 per cent)

Sources: Zakboek Onderwijsstatistieken 1982, Centraal Bureau voor de Statistiek, Tables 28 and 35; Ibid., 1984, Tables 3.8 and 3.15.

Table 3

NETHERLANDS

STUDENTS IN VOCATIONAL COLLEGES BY SUBJECT AND SEX: 1980 AND 1982

Subject	1980						1982					
	Full-time			Part-time e			Full-time			Part-time e		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Technical	30 024	11.8	88.2	4 964	9.3	90.7	31 759	11.0	89.0	4 957	10.0	90.0
Nautical	3 296	1.8	98.2	.	.	.	3 384	2.6	97.4	.	.	.
Agricultural	4 750	14.5	85.5	.	.	.	5 150	17.1	82.9	63	12.7	87.3
Retail	659	43.7	56.3	.	.	.	694	46.7	53.3	.	.	.
Economics/Administration	11 021	21.4	78.6	396	12.4	87.6	15 442	28.3	71.7	1 454	15.5	84.5
Socio-Pedagogic Education	33 320	67.5	32.5	16 484	50.4	49.6	38 264	68.3	31.7	15 559	53.8	46.2
Fine Arts	11 460	47.8	52.2	3 707	36.7	63.3	12 123	50.6	49.4	3 806	39.6	60.4
Primary School Teacher Training	15 091	61.4	38.6	18 271(1)	89.2	10.8	11 532	66.0	34.0	22 641	88.5	11.5
Secondary General School Teacher Training	22 076	47.6	52.4	29 792	53.1	46.9	22 535	50.6	49.4	29 201	55.0	45.0
Secondary Vocational School Teacher Training	74	13.5	86.5	5 124	3.0	97.0	.	.	.	5 458	4.1	95.9
Total	131 771	41.5	58.5	78 736(1)	53.6	46.4	140 883	42.9	57.1	83 139	56.4	43.6

(F + M = 100 per cent)

1. Includes 300 students whose gender is not recorded in the statistics.

Sources: Zakboek Onderwijsstatistieken 1982, op.cit., Table 38; Ibid. 1984, Table 4.2.

Table 4

NETHERLANDS

FINAL DEGREES TAKEN AT UNIVERSITY LEVEL (1) BY BRANCH OF STUDY AND SEX: 1970-71, 1974-75, 1979-80, 1981-82

Branch of Study	1970-71			1974-75			1979-80			1981-82		
	Total No. of Degrees	F (%)	M	Total No. of Degrees	F (%)	M	Total No. of Degrees	F (%)	M	Total No. of Degrees	F (%)	M
Theology	187	11.2	88.8	179	15.6	84.4	152	17.1	82.9	188	37.2	62.8
Arts and Letters	519	36.6	63.4	648	41.7	58.3	1 061	45.5	54.5	1 631	47.1	52.9
Philosophy	22	0	100	31	9.7	90.3	53	20.8	79.2	72	16.7	83.3
Medical Sciences	1 292	16.5	83.5	1 833	20.0	80.0	2 021	24.1	75.9	1 917	25.5	74.5
Mathematics and Natural Sciences	967	11.5	88.5	1 119	13.0	87.0	1 218	17.7	82.3	1 368	18.5	81.5
Engineering	1 294	1.2	98.8	1 527	1.5	98.5	1 403	3.1	96.9	1 555	4.2	95.8
Agriculture	186	9.1	90.9	335	16.4	83.6	343	21.3	78.7	435	26.9	73.1
Law	1 049	21.4	78.6	1 439	19.9	80.1	1 385	27.7	72.3	1 855	30.3	69.7
Social Sciences	1 446	11.7	88.3	1 996	17.9	82.1	2 056	23.7	76.3	2 251	26.9	73.1
Education	122	36.1	63.9	322	46.3	53.7	670	61.0	39.0	770	64.5	35.5
Geography and Prehistory	87	16.1	83.9	189	14.3	85.7	365	20.0	80.0	372	23.9	76.1
Physical Education	.	.	.	1	0	100	5	40.0	60.0	16	43.8	56.2
Business and Public Administration	.	.	.	46	2.2	97.8	100	3.0	97.0	153	10.5	89.5
Total	7 171	14.2	85.8	9 665	17.7	82.3	10 832	24.9	75.1	12 583	28.2	71.8

(F + M = 100 per cent)

1. Excluding theological colleges.

Source: Zakboek Onderwijsstatistieken 1984, op.cit. Table 4.7a and 4.7c.

Table 1

NEW ZEALAND

PRE-PRIMARY, PRIMARY, SECONDARY AND HIGHER EDUCATION BY SEX: 1970, 1975, 1981, 1983

Level of Education	1970			1975			1981			1983		
	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M	No. of Pupils	F (%)	M
Pre-primary(1)	41 103	49.4	50.6	54 757	49.2	50.8	55 992	48.9	51.1	57 764	49.3	50.7
Primary	399 879	48.4	51.6	393 381	48.5	51.5	370 359	48.6	51.4	350 265	48.5	51.5
Secondary												
Compulsory(2)	226 685	49.0	51.0	260 689	49.0	51.0	243 533	48.9	51.1	249 363	49.0	51.0
Post-Compulsory	76 993	46.9	53.1	91 007	49.0	51.0	104 890	50.2	49.8	108 457	50.6	49.4
Higher												
University(3)	23 323	25.8	74.2	25 875	32.3	67.7	31 549	37.7	62.3	33 144	40.5	59.5
Non-University(4)	9 790	69.5	30.5	11 445	70.6	29.4	12 816	74.4	25.6	11 385	75.0	25.0
University (Other)(5)	10 717	41.6	58.4	15 621	50.1	49.9	21 215	56.5	43.5	23 369	58.6	41.4

(F + M = 100 per cent)

1. Kindergartens, playcentres, and pre-school classes located in primary schools.
2. Compulsory consists of Forms 1-4, non-compulsory consists of Forms 5 or higher, regardless of the age of the child.
3. University comprises full year full-time students.
4. Non-university consists of students training to be primary, secondary and kindergarten teachers, plus students at technical institutes. All are full year full-time students.
5. Other university consists of all university students who are not full year full-time.

Source: Data supplied by national authorities.

Table 2

NEW ZEALAND

SCHOOL CERTIFICATE PASSES BY SELECTED SUBJECTS AND SEX: 1983

School Subject	Total No. of passes	F (%)	M
English	28 775	59.7	40.3
French (Audio-Lingual)	3 462	77.3	22.7
Maori	689	56.9	43.1
Economics	8 091	48.5	51.5
History	5 904	53.2	46.8
Geography	13 876	50.2	49.8
Mathematics	26 954	48.0	52.0
Science	18 636	48.2	51.8
Biology	3 355	63.0	37.0
Chemistry	1 286	24.7	75.3
Physics	1 496	9.8	90.2
Art	4 074	59.5	40.5
Technical Drawing	6 117	7.5	92.5
Engineering Shopwork	2 192	0.7	99.3
Woodwork	1 805	1.1	98.9
Home Economics	2 183	90.7	9.3
Accounting	5 066	48.1	51.9
Type-writing	5 798	98.9	1.1
Total (includes all other subjects)	150 993	51.9	48.1

(F + M = 100 per cent)

Source: Education Statistics of New Zealand 1984, Department of Education, Table 36.

Table 3

NEW ZEALAND

HIGHEST LEVEL OF ATTAINMENT OF STUDENTS
LEAVING SECONDARY SCHOOLS(1) BY SEX: 1983

Level of Attainment	Number of Students	F (%)	M
University Scholarship	190	21.1	78.9
University Bursaries Examination	5 488	47.5	52.5
Higher School Certificate	3 387	46.9	53.1
University Entrance	8 852	57.3	42.7
Sixth Form Certificate	8 027	53.5	46.5
School Certificate			
3 or More Subjects	5 458	50.2	49.8
2 Subjects	3 096	52.8	47.2
1 Subject	3 525	52.7	47.3
No attainment	18 034	44.6	53.4
Totals	56 057	49.7	50.3

(F + M = 100 per cent)

1. Does not include students leaving to attend another secondary school or deceased. Exludes the Correspondence School.

Source: Education Statistics of New Zealand 1984, op. cit., Table 41.

Table 4

NEW ZEALAND

FULL-YEAR LEVEL 3 (1), LEVEL 5 (2) AND LEVEL 9 (3) COURSES BY SEX: 1983

Type of Course	Number of Students	F (%)	M
Level 3			
Authority for Advanced Vocational Awards (Technicians Certificate)	1 858	9.8	90.2
Trade Certificate Board	17 644	9.1	90.9
Other	29 970	65.9	34.1
Level 5			
Authority for Advanced Vocational Awards	13 559	27.1	72.9
Trade Certificate Board	3 091	1.4	98.6
Other	18 383	43.7	56.3
Level 9	58 725	71.9	28.1

(F + M = 100 per cent)

1. Level 3: Education equivalent to Forms 5 to 7. It also includes continuing education courses which do not go beyond Form 7 level and which do not require University Entrance or Sixth Form Certificate as a minimum entrance qualification. Included are all apprenticeship courses for the Trade Certificate Board (TCB) and some of the courses for the Authority for Advanced Vocational Awards (AAVA).

2. Level 5: Education leading to an award not equivalent to a university degree. This level includes continuing education courses at a level beyond Form 7, many of which require University Entrance or Sixth Form Certificate as an entrance qualification. University diplomas, Teacher College courses and the New Zealand Certificate course prescribed by the Authority for Advanced Vocational Awards are included at this level.

3. Level 9: Education not definable by level. This relates to out-of-school education for which no well-defined educational prerequisites are specified. It includes community and hobby classes, many extra-mural university courses, and study at institutions such as the Workers Education Association.

Source: Education Statistics of New Zealand 1984, op.cit., Table 46.

Table 5

NEW ZEALAND

UNIVERSITY EDUCATION(1) BY SEX AND TYPE OF COURSE: 1983

Course	Number of Students	F (%)	M
First Degree Level and Other Courses			
Bachelor Honours Degrees	983	41.3	58.7
Bachelor Degrees	35 261	46.8	53.2
Diplomas	1 503	39.4	60.6
Intermediate Courses	2 434	31.0	69.0
Certificates	2 441	50.9	49.1
Other Courses	175	54.9	45.1
Total	42 797	45.8	54.2
Post-Graduate Level			
PhD Degrees	1 058	26.4	73.6
Masters Degrees	2 452	39.6	60.4
Bachelors Honours Degrees	289	47.8	52.2
Bachelors Degrees	38	28.9	71.1
Post-Graduate Diplomas	1 195	44.9	55.1
Post-Graduate Certificates	30	63.3	36.7
Post-Graduate Other Courses	735	31.6	68.4
Total	5 797	37.7	62.3
Total Students (adjusted for students enrolled in more than one course)	46 470	44.9	55.1

(F + M = 100 per cent)

1. Excludes overseas students.

Source: Education Statistics of New Zealand 1984, op.cit., Table 63.

Table 1

NORWAY

PRIMARY, SECONDARY AND POST-SECONDARY EDUCATION BY SEX AND TYPE OF SCHOOL: 1965, 1970, 1975, 1980, 1982

Type of School	1965			1970			1975			1980			1982		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Primary/Lower Cycle of Comprehensive Schools	367.6	48.8	51.2	368.2	48.8	51.2	391.1	48.7	51.3	390.8	48.7	51.3	373.2	48.9	51.1
Upper Primary/Upper Cycle of Comprehensive Schools	89.1	49.1	51.0	157.9	49.1	50.9	182.2	48.8	51.2	197.8	48.6	51.4	203.8	48.6	51.4
Complementary	30.8	48.1	51.9	9.6	47.9	52.1	0.09	38.2	61.8	.	.	.	.	.	.
Special (1)	2.7	41.0	59.0	3.3	31.0	69.0	3.4	37.0	63.0	3.6	36.1	63.9	3.2	37.5	62.5
Folk High Schools	6.0	66.6	33.3	6.9	69.6	30.4	7.7	75.0	25.0	7.7	72.7	27.3	7.3	69.9	30.1
Secondary General (2)	106.9	47.8	52.2	76.9	48.1	51.9	66.1	51.6	48.3	.	.	.	.	.	.
of which 1st cycle	66.0	50.9	49.1	26.6	51.9	48.1	0.6	50.0	50.0	.	.	.	.	.	.
Vocational	59.0	39.5	60.5	70.0	41.7	58.3	78.5	44.5	55.5	.	.	.	.	.	.
Upper Secondary (3)	-			-			-			156.4(3)	49.8	50.2	168.6(3)	50.9	49.1
Other Secondary (3)	-			-			-			19.9(3)	53.8	46.2	12.1(3)	38.0	62.0
Universities	19.6	24.5	75.5	30.1	28.6	71.4	40.8	36.0	64.0	40.6	41.0	59.0	41.0	44.0	56.0
Colleges	13.8	40.6	59.4	20.0	32.5	67.5	26.0	40.4	59.6	33.2	48.5	51.5	47.0	52.9	47.1

(F + M = 100 per cent)

1. Most pupils with handicaps are integrated in ordinary schools.
2. The decline in the number of pupils in general secondary schools after 1965 is due to the introduction of the 9th year compulsory school, which has replaced the general secondary school, 1st cycle.
3. Grouped under the heading: "Schools under the Act governing Upper Secondary Education".

Sources: Utdanningsstatistikk -- Oversikt 1977-1979 and 1981, Table 2; data supplied by national authorities.

Table 2

NORWAY

UPPER SECONDARY SCHOOLING(1) BY SEX AND LINE OF STUDY: 1976, 1980, 1982

Line of Study	1976			1980			1982		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
General Subjects	68 773	51.7	48.3	71 513	54.6	45.4	73 833	56.0	44.0
Handicrafts, Fine and Applied Arts	3 306	92.6	7.4	4 556	91.5	8.5	4 634	92.0	8.0
Commercial and Clerical	18 385	63.3	36.7	23 152	66.8	33.2	25 897	69.4	30.6
Manual and Industrial	31 059	16.4	83.6	37 297	15.3	84.7	40 365	14.8	85.2
Maritime and Fisheries	3 023	9.0	91.0	3 088	9.9	90.1	3 449	10.4	89.6
Health and Social Welfare	901	95.9	4.1	2 614	97.2	2.8	4 450	98.9	1.1
Domestic Sciences	7 085	96.2	3.8	7 944	94.3	5.7	8 791	89.8	10.2
Sports and Physical Education	321	30.8	62.2	1 013	41.2	58.8	1 400	42.6	57.4
Total	132 753	47.7	52.3	151 177	49.7	50.3	162 819	50.9	49.1

(F + M = 100 per cent)

1. Only pupils covered by the Act concerning upper secondary education.

Sources: Utdanningsstatistikk Oversikt 1, October 1977, Table 20.
Utdanningsstatistikk, Videregaende skoler, 1. October 1981, Table 27.
Utdanningsstatistikk, Videregaende skoler, 1. October 1982, Table 27.

Table 3

NORWAY

HIGHER EDUCATION BY SEX AND TYPE OF INSTITUTION: 1977, 1980, 1982

Type of Institution	1977 No. of Students (000's)	1977 F (%)	1977 M (%)	1980 No. of Students (000's)	1980 F (%)	1980 M (%)	1982 No. of Students (000's)	1982 F (%)	1982 M (%)
Universities	39.3	37.1	62.9	40.6	41.0	59.0	41.0	44.0	56.0
Colleges	3.8	32.8	67.2	4.9	37.6	62.4	6.7	43.7	56.3
Teacher Training Colleges	11.2	68.0	32.0	13.7	70.6	29.4	13.5	73.7	26.3
Colleges for Social Services	1.0	64.2	35.8	1.1	67.0	33.0	1.1	70.9	29.1
Technical Colleges	5.9	9.2	90.8	6.2	10.5	89.5	6.7	14.9	85.1
Further Colleges for Nurses(1)/ Colleges for Health Education(2)	0.3	91.9	8.1	0.4	92.5	7.5	8.1	87.2	12.8
Colleges for Military Education	0.6	0.3	99.7	0.6	1.6	98.4	0.7	1.7	98.3
Other Schools	4.7	38.9	61.1	6.2	45.5	54.5	10.3	30.5	69.5
Total	66.7	40.0	60.0	73.7	44.4	55.6	88.1	48.8	51.2

(F + M = 100 per cent)

1. 1977 and 1980.
2. 1982.

Sources: Undervisningsstatistik, universiteter og hogskoler 1977, pp.30 and 32, Table 5; 1980, Table 1; and 1982 Table 1.

Table 4

NORWAY

UNIVERSITY STUDENTS BY SEX AND FIELD OF STUDY: 1975, 1980, 1982

Field of Study	1975			1980			1982		
	Total No. of Students	F (%)	M (%)	Total No. of Students	F (%)	M (%)	Total No. of Students	F (%)	M (%)
Humanities, Religion and Theology, Fine and Applied Arts	15 880	52	48	13 892	58	42	13 033	61	39
Teacher Training	2 249	48	52	1 688	52	48	1 565	58	42
Business Administration, Social and Behavioural Science and Law	9 342	29	71	10 171	40	60	11 080	44	56
Natural science, Mathematics and Engineering	9 064	15	85	10 488	20	80	11 089	23	77
Medical and Paramedical	3 211	30	70	3 492	39	61	3 346	43	57
Agricultural, Forestry and Fishery	740	18	82	817	26	74	824	33	67
Unspecified Field of Study	288	51	49	72	53	47	65	57	48
Total	40 774	36	64	40 620	41	59	41 002	44	56

(F + M = 100 per cent)

Source: Data supplied by national authorities.

Table 1

PORTUGAL (1)

PUPILS ENROLLED IN PRIMARY, LOWER AND UPPER SECONDARY (10TH AND 11TH YEARS) EDUCATION BY SEX AND BRANCH OF SCHOOLING: 1978-79 AND 1979-80

Branch of Schooling	1978-79			1979-80		
	No. of Pupils	F (%)	M (%)	No. of Pupils	F (%)	M (%)
Primary	930 754	-	-	928 992	-	-
Basic Preparatory(2)						
1st year	168 864	46.9	53.1	164 556	46.8	53.2
2nd year	138 292	48.0	52.0	139 963	48.5	51.5
General Unified Secondary						
(Lower secondary)	267 556	51.4	48.6	261 015	51.6	48.4
7th year	102 093	50.1	49.9	104 120	50.6	49.4
8th year	83 953	51.7	48.3	78 459	52.4	47.6
9th year	81 510	52.6	47.4	78 436	53.2	46.8
Complementary general						
(Upper secondary)						
10th year	49 009	54.4	45.6	44 591	52.5	47.5
Natural Science	19 771	58.2	41.8	18 959	55.1	44.9
Technology	8 755	6.9	93.1	6 863	4.4	95.6
Economics and Social Science	6 245	64.1	35.9	5 855	58.3	41.7
Human Sciences	12 875	76.0	24.0	11 433	73.0	27.0
Arts	1 363	57.2	42.8	1 481	49.2	50.8
11th year	-	-	-	39 751	56.2	43.8
Natural Science	-	-	-	16 711	58.8	41.2
Technology	-	-	-	6 235	5.4	94.6
Economics and Social Sciences	-	-	-	4 726	65.7	34.3
Human Sciences	-	-	-	10 943	77.1	22.9
Arts	-	-	-	1 136	54.8	45.2

(F + M = 100 per cent)

1. Including Açores and Madère.

2. Includes education through television.

Source: Estatisticas de Educaçao, 1979-80, Tables 3-11.

Table 2

PORTUGAL (1)

STUDENTS ENROLLED IN UPPER SECONDARY SCHOOLING, (12TH YEAR) AND TECHNICAL EDUCATION, BY SEX AND LINE OF STUDY: 1978-79, 1979-80

Line of Study	1978-79			1979-80		
	No. of Students	F (%)	M	No. of Students	F (%)	M
12th Year Pre-University Upper Secondary						
General	18 754	49.8	50.2	19 609	49.0	51.0
Complementary	71 308	55.1	44.9	46 855	55.3	44.7
Technical						
Commercial	24 210	50.0	50.0	24 332	47.1	52.9
Industrial	17 761	3.5	96.5	16 810	6.6	93.4
Visual Arts	1 383	68.8	31.2	1 194	56.9	43.1
Agriculture	122	18.0	82.0	18	16.7	83.3
Technical courses organised under Decree 37029						
Commercial	1 811	39.3	60.7	627	47.0	53.0
Industrial	1 338	2.0	98.0	833	2.9	97.1

(F + M = 100 per cent)

1. Including Açores and Madère.

Source: Estatisticas da Educaçao, 1979-1980, Tables 12-15.

Table 3

PORTUGAL (1)

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX AND LINE OF STUDY:
1978-79 AND 1979-80

Line of Study	1978-79			1979-80		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Letters and Human Sciences	17 146	71.4	28.6	15 639	70.6	29.4
Physical and Natural Sciences	4 767	61.1	38.9	5 156	70.4	29.6
Social Sciences	16 212	43.7	56.3	16 702	42.4	57.6
Arts	2 762	44.7	55.3	2 726	45.2	54.8
Law	7 655	24.6	75.4	8 968	32.7	67.3
Technical Studies	15 343	11.8	88.2	15 716	15.3	84.7
Medical, Paramedical and Pharmacy	11 617	51.5	48.5	11 486	53.2	46.8
Agriculture and Rearing	2 133	33.3	66.7	2 285	35.8	64.2
Environmental Sciences	123	52.8	47.2	108	25.9	74.1
Physical Education	1 106	27.9	72.1	1 203	29.0	71.0
Military Education	323	0	100	405	0	100
Nautical Education	405	2.6	97.4	479	4.0	96.0
Theology	353	0	100	506	9.7	90.3
Total	79 945	42.8	57.2	81 379	43.9	56.1

(F + M = 100 per cent)

1. Including Açores and Madère.

Source: Estatisticas da Educaçao, 1979-1980, Table 16.

Table 1

SPAIN

PRE-PRIMARY AND GENERAL BASIC EDUCATION BY SEX AND TYPE OF INSTITUTION:
1971-72, 1976-77, 1980-81, 1981-82

Type of Institution	1971-72			1976-77			1980-81			1981-82		
	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M	No. of Pupils (000's)	F (%)	M
Pre-primary	760.3	50.7	49.3	956.2	51.2	48.8	1 182.4	50.2	49.8	1 197.9	49.9	50.1
State schools	365.3	48.5	51.5	389.0	47.4	52.6	651.3	47.2	52.8	671.0	47.1	52.9
Non state schools	395.0	52.7	47.3	567.2	53.8	46.2	531.1	53.8	46.2	526.9	53.5	46.5
General basic	4 182.0	49.9	50.1	5 544.6	48.9	51.1	5 606.4	48.9	51.1	5 629.9	-	-
State schools	2 960.5	47.6	52.4	3 399.3	46.9	53.1	3 549.8	46.6	53.4	3 574.9	46.4	53.6
Non state schools	1 221.5	55.7	44.3	2 145.3	52.2	47.8	2 056.6	52.8	47.2	2 054.9	-	-
School Leavers with Qualifications												
Graduates of basic school	138.9(1)	49.8	50.2	372.2	51.3	48.7	424.7	51.2	48.8	442.0	51.3	48.7
School leaving certificate	80.5	50.9	49.1	209.3	46.2	53.8	224.1	46.7	53.3	222.5	44.3	55.7

(F + M = 100 per cent)

1. Primary school certificate.

Sources: Estadistica de la Enseñanza en España, 1980-81 pp.32-33; 1981-82, pp.32-33.

Table 2

SPAIN

STUDENTS ENROLLED IN UPPER SECONDARY GENERAL AND VOCATIONAL EDUCATION BY SEX AND TYPE OF INSTITUTION: 1971-72, 1976-77, 1980-81, 1981-82

Type of Schooling and Institution	1971-72			1976-77			1980-81			1981-82		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
General (including pre-university orientation year)	1 333.0	45.1	54.9	844.3	50.0	50.0	1 091.2	53.5	46.5	1 124.3	-	-
State schools	529.7	48.2	51.8	475.6	53.0	47.0	718.2	55.4	44.6	737.0	55.5	44.5
Private schools	531.8	42.7	57.3	280.9	45.0	55.0	373.0	49.8	50.2	387.3	50.3	49.7
Other (Libres)	261.6	45.6	54.4	87.7	50.3	49.7	.	.	.	.	.	.
Vocational	159.0	9.1	90.9	359.0	32.2	67.8	558.8	37.9	62.1	619.1	-	-
State schools	58.6	6.8	93.2	153.1	25.3	74.7	301.7	30.7	69.3	345.8	31.3	68.7
Non state schools	100.4	10.4	89.6	205.9	37.3	62.7	257.1	46.4	53.6	273.3	49.7	50.3

(F + M = 100 per cent)

Sources: Estadistica de la Enseñanza en España, 1980-81, pp.34-35; 1981-82, pp.34-35.

Table 3

SPAIN

TOTAL ENROLMENT IN UNIVERSITIES AND UNIVERSITY-LEVEL COLLEGES
BY SEX AND LINE OF STUDY: 1980-81 AND 1981-82

Line of Study	1980-81			1981-82		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Fine Arts	3 670	52.5	47.5	4 199	55.2	44.8
Sciences	1 899	37.9	62.1	1 743	34.3	65.7
Biological Sciences	20 050	55.9	44.1	21 990	56.2	43.8
Physical Sciences	6 646	25.8	74.2	6 942	29.1	70.9
Geological Sciences	1 828	29.5	70.5	1 895	30.8	69.2
Mathematical Sciences	8 086	42.6	57.4	8 297	46.5	53.5
Chemical Sciences	15 014	40.8	59.2	14 859	42.5	57.5
Economics and Management	45 195	24.4	75.6	47 796	27.7	72.3
Information Sciences	7 043	45.2	54.8	8 540	44.7	55.3
Political and Social Sciences	4 300	50.4	49.6	4 202	49.8	50.2
Law	83 350	37.3	62.7	91 206	38.4	61.6
Canonical Law	93	25.3	74.7	76	19.7	80.3
Pharmacy	20 367	66.5	33.5	20 727	67.0	33.0
Philosophy and Letters	7 271	60.8	39.2	3 801	60.2	39.8
Philology	28 791	65.4	34.6	33 442	67.6	32.4
Educational Science	29 710	60.5	39.5	32 906	62.2	37.8
Geography and History	39 198	58.8	41.2	41 669	59.8	40.2
Computer Science	4 112	25.0	75.0	4 513	28.9	71.1
Medicine	71 595	43.6	56.4	66 629	44.5	55.5
Psychology	18 432	61.9	38.1	17 130	64.4	35.6
Veterinary Science	6 612	30.2	69.8	8 129	32.5	67.5
Theology	649	19.3	80.7	782	18.4	81.6
Total	423 911	46.4	53.6	441 473	47.8	52.2

(F + M = 100 per cent)

Sources: Estadistica de la Enseñanza en España, 1980-81, Table 103; 1981-82, Table 108.

Table 1

SWEDEN

ENROLLED STUDENTS BY SEX AND TYPE OF EDUCATION: 1981

Type of Education	No. of Students	F (%)	M
9 Year Compulsory School	1 017 390	48.7	51.3
Special schools	12 029	41.9	58.1
Integrated upper secondary school	280 600	51.0	49.0
Other upper secondary	6 818	45.0	55.0
Higher -- undergraduate	158 380	55.2	44.8
Higher -- postgraduate	12 482	26.2	73.8
Municipal adult education	145 664	66.2	33.8
State schools for adult education	19 188	46.6	53.4
Labour market training	24 437	37.9	62.1
Folk high schools	14 391	59.6	40.4
Other	3 224	37.5	62.5
Total	1 694 603	50.9	49.1

(F + M = 100 per cent)

Source: Statistical Abstract of Sweden, Stockholm, 1985, Table 410.

Table 2

SWEDEN

STUDENTS ADMITTED TO THE 3- AND 4-YEAR LINES OF UPPER SECONDARY SCHOOLING (SPECIALISED COURSES IN ECONOMY AND TECHNOLOGY INCLUDED) AND TO 2-YEAR THEORETICAL LINES BY SEX AND LINE OF STUDY: 1975, 1980, 1983-84

Line of Study	1975			1980			1983-84		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
3- and 4-Year Lines									
Humanities	3 459	79.8	20.2	4 213	85.6	14.4	4 282	84.3	15.7
Social Sciences	3 842	68.7	31.3	7 305	72.1	27.9	6 874	71.8	28.2
Economics (3-year) and associated special courses	5 450	53.9	46.1	8 066	60.3	39.7	11 708	63.9	36.1
Sciences	7 408	42.1	57.9	7 638	45.8	54.2	7 667	45.3	54.7
Technical (4 year) with associated special courses	6 006	7.6	92.4	8 878	11.8	88.2	12 649	20.8	79.2
Science/Technical	.	.	.	1 165	28.5	71.5	-	-	-
2-Year Theoretical Lines									
Social Studies	7 740	71.9	28.1	11 554	66.7	33.3	9 187	64.5	35.5
Economics	3 071	57.7	42.3	3 380	61.5	38.5	4 253	60.1	39.9
Technical	2 080	3.1	96.9	1 070	2.6	97.4	683	3.8	96.2
Music	149	65.1	34.9	214	63.1	36.9	268	58.6	41.1

(F + M = 100 per cent)

Sources: Utbildningsstatistisk arsbok 1981, Table 5.4a; Statistical Abstract of Sweden 1985, Table 404.

Table 3

SWEDEN

STUDENTS ADMITTED TO 2-YEAR VOCATIONAL LINES OF UPPER SECONDARY SCHOOLING BY SEX AND LINE OF STUDY: 1977, 1980,1983-84

Line of Study	1977			1980			1983-84		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Consumer Studies	7 551	98.1	1.9	7 264	97.0	3.0	5 146	91.6	8.4
Distribution and Commerce	7 085	81.7	18.3	7 767	82.6	17.4	9 370	73.0	27.0
Health Studies	2 820	97.0	3.0	3 462	95.7	4.3	5 592	89.5	10.5
Social Service	.	.	.	770	95.5	4.5	2 631	94.2	5.8
Textiles and Clothing	258	96.5	3.5	292	93.8	6.2	601	95.7	4.3
Food and Catering	806	44.7	55.3	1 094	48.4	51.6	2 052	54.9	45.1
Mechanics and Technical	5 228	1.7	98.3	6 225	2.3	97.7	7 313	3.9	96.1
Car and Vehicle Mechanics	3 077	2.9	97.1	3 659	2.2	97.8	4 118	3.6	96.4
Carpentry and Woodwork	427	6.3	93.7	609	4.6	95.4	778	8.6	91.4
Building and Construction	4 170	1.6	98.4	4 815	1.5	98.5	5 013	2.9	97.1
Electronics	3 486	1.5	98.5	3 906	2.0	98.0	5 148	4.7	95.3
Process Industries	391	12.0	88.0	398	9.0	91.0	622	13.0	87.0
Forestry	520	1.9	98.1	580	1.6	98.4	716	1.8	98.2
Agriculture	765	45.6	54.4	685	43.8	56.2	1 095	46.8	53.2
Operating and Maintenance Mechanics	.	.	.	674	3.4	96.6	1 506	4.6	95.4
Horticulture	.	.	.	124	48.4	51.6	318	55.7	44.3

(F + M = 100 per cent)

Sources: Utbildningsstatistisk arsbok 1981, Table 5.4b; and Statistical Abstract of Sweden 1985, Table 404.

Table 4

SWEDEN

STUDENTS REGISTERED IN HIGHER EDUCATION BY SEX AND SECTOR OF STUDY: 1977, 1980, 1982

Line of Study	1977			1980			1982		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Education for technical professions	19 860	15	85	23 446	17	83	26 003	19.7	80.3
Education for administrative, economic and social professions	14 181	52	48	25 702	50	50	28 147	52.3	47.7
Education for health professions	20 787	72	28	22 433	73	27	22 288	73.2	26.8
Education for educational professions	18 937	78	22	24 194	75	25	24 301	75.3	24.7
Education for cultural & information professions	3 681	52	48	4 592	56	44	5 388	58.7	41.3
Other education & training outside above sectors	74 329	50	50	62 900	55	45	62 955	56.6	43.4
Total	148 386	52	48	158 280	55	45	163 114	55.5	44.5

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(F + M = 100 per cent)

Sources: Utbildningsstatistisk arsbok 1981, Table 6B.5; Statistical Abstract of Sweden 1985, Table 412.

Table 1

SWITZERLAND

PRE-PRIMARY, PRIMARY AND SECONDARY(1) EDUCATION
BY SEX AND TYPE OF SCHOOLING: 1976-77 AND 1982-83

Type of Schooling	1976-77			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Pre-primary	132 536	46.5	53.5	120 076	48.7	51.3
Primary	503 153	49.2	50.8	415 478	49.0	51.0
Special (2)	40 155	39.7	60.3	34 589	39.3	60.7
Lower secondary	360 821	49.4	50.6	347 601	49.5	50.5
Basic level	148 273	48.6	51.4	129 795	47.5	52.5
Extended level	205 806	49.9	50.1	201 974	50.8	49.2
Non-selective programmes	6 742	49.2	50.8	15 832	48.5	51.5
Upper secondary-general	51 053	45.8	54.2	68 563	50.3	49.7
Programmes for the maturité(3)	39 619	39.4	60.6	55 380	44.4	55.6
Ecoles de culture générale (ECG)	4 538	77.5	22.5	7 175	77.0	23.0
Other general education	6 896	61.8	38.2	6 008	72.4	27.6
Upper secondary-teacher training	15 923	69.8	30.2	10 139	79.3	20.7
Pre-primary	1 992	99.8	0.2	2 003	99.5	0.5
Basic education	12 286	62.9	37.1	6 709	69.0	31.0
For specialisation in a school subject	1 645	84.8	15.2	1 427	99.8	0.2

(F + M = 100 per cent)

1. Excluding vocational education.
2. Includes children of lower secondary school age.
3. University preparatory lines.

Sources: Statistique des Elèves: Année Scolaire 1979/80, Office Fédéral de la Statistique, 1981; data supplied by national authorities.

Table 2

SWITZERLAND

UPPER SECONDARY VOCATIONAL EDUCATION BY SEX AND BRANCH OF STUDY: 1976-77 AND 1982-83

Branch of Study	1976-77			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Agriculture and Horticulture	10 170	18.4	81.6	12 749	22.3	77.7
Industy, Arts and Crafts	76 185	6.3	93.7	90 550	6.9	93.1
Technical	14 371	16.4	83.6	16 267	20.2	79.8
Commerce and Administration	56 449	65.9	34.1	72 632	69.1	30.9
Transport	2 637	20.3	79.7	5 251	35.2	64.8
Hotel and Domestic Science	7 944	50.6	49.4	9 083	55.0	45.0
Sanitation, Public Hygiene, Beautician and Hairdressing	5 635	87.2	12.8	6 576	89.8	10.2
Law and Public Order	303	2.3	97.7	404	5.9	94.1
Medical Care	13 311	90.1	9.9	15 736	92.1	7.9
Artistic	2 968	48.8	51.2	4 634	53.8	46.2
Social Work and Pastoral Care	359	93.0	7.0	494	99.4	0.6
Other occupational branches	67	6.0	94.0	1 459	12.1	87.9
Total	190 399	36.5	63.5	235 835	39.4	60.6

(F + M = 100 per cent)

Sources: Statistique des Elèves: Année Scolaire 1979/80, op.cit.; data supplied by national authorities.

Table 3

SWITZERLAND

STUDENTS PREPARING THE "MATURITE" BY SEX AND LINE OF STUDY:
1976-77 AND 1982-83

Line of Study	1976-77			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M
A. Classical Studies	1 203	38.0	62.0	1 584	47.8	52.2
B. Mathematics/Latin	16 411	46.5	53.5	16 951	50.3	49.7
C. Mathematics/Physical Sciences	12 041	19.7	80.3	14 076	20.7	79.3
D. Modern Languages	2 883	72.6	27.4	7 277	70.7	29.3
E. Economy/Social Sciences	5 427	37.4	62.6	9 543	41.0	59.0
Other subjects	1 654	62.6	37.4	5 949	56.1	43.9
TOTAL	39 613	39.4	60.6	55 380	44.4	55.6

(F + M = 100 per cent)

Table 4

SWITZERLAND

POST-SECONDARY (NON-UNIVERSITY) EDUCATION BY
SEX TYPE AND BRANCH OF STUDY AND SEX: 1976-77 AND 1982-83

Type and Branch of Study	1976-77			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Teacher Training	3 720	60.9	39.1	3 248	60.4	39.6
Professional Education	14 457	16.7	83.3	21 114	21.4	78.6
Agriculture & Horticulture	200	1.0	99.0	250	2.8	97.2
Industry, Arts & Crafts	711	0.1	99.9	766	8.6	91.4
Technical	8 046	1.7	98.3	10 382	3.4	96.6
Commerce & Administration	1 989	8.7	91.3	3 815	19.3	80.7
Transport	35	0	100	40	0	100
Hotel & Domestic Science	335	26.6	73.4	1 251	40.1	59.9
Sanitation, Public Hygiene, Hairdressing & Beautician	15	73.3	26.7	.	.	.
Medical Care	364	94.5	5.5	99	55.6	44.4
Scientific Occupations	1 254	68.7	31.3	1 626	70.4	29.6
Social Work & Pastoral Care	1 474	52.6	47.4	2 885	57.4	42.6
Other Occupational Branches	34	44.1	55.9	-	-	-

(F + M = 100 per cent)

Sources: (Tables 3 and 4): Statistique des Elèves: Année Scolaire 1976/77. Bureau Fédéral de la Statistique, 1978, Table 2; data supplied by national authorities.

Table 5

SWITZERLAND

STUDENTS ENROLLED(1) IN UNIVERSITIES AND EQUIVALENT INSTITUTIONS
BY SEX AND LINE OF STUDY: 1974-75, 1978-79, 1982-83

Line of Study	1974-75			1978-79			1982-83		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Human & Social Sciences(2)	2 228	43.9	56.1	2 035	45.8	54.2	2 062	51.9	48.1
Theology	976	17.9	82.1	1 212	21.5	78.5	1 603	28.5	71.5
Philosophy: Languages, Letters & Culture	5 442	53.9	46.1	6 832	57.5	42.5	8 506	59.9	40.1
History	2 022	40.0	60.0	2 869	43.7	56.3	3 956	46.1	53.9
Psychology, Science of Education Physical Educ.	3 294	52.9	47.1	4 296	55.8	44.2	5 125	60.9	39.1
Social & Economic Science	7 058	15.7	84.3	7 006	17.7	82.3	8 061	22.4	77.6
Law	5 355	22.0	78.0	7 233	24.7	75.3	8 270	29.2	70.8
Physical & Natural Science(2)	1 930	19.4	80.6	1 746	19.9	80.1	1 457	23.9	76.1
Physical Science	2 708	10.3	89.7	2 744	12.3	87.7	3 401	11.0	89.0
Natural Science	3 851	24.7	75.3	4 907	24.0	76.0	5 906	26.7	73.3
Medicine	9 216	25.1	74.9	9 999	31.3	68.7	10 716	36.6	63.4
Technical Sciences	6 583	6.2	93.8	6 732	6.8	93.2	7 143	10.3	89.7
Total	50 663	26.2	73.8	57 611	29.9	70.1	66 206	34.4	65.6

(F + M = 100 per cent)

1. All students, winter semester.
2. Not otherwise classified.

Source: Etudiants des Hautes Ecoles Suisses: 1982-83, Table 305.

Table 1

TURKEY

ENROLMENTS IN PRIMARY, JUNIOR HIGH, AND HIGH SCHOOLS BY SEX:
1974-75, 1979-80, 1981-82

Type of School	1974-75			1979-80			1981-82		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Primary	5 377.7	44.3	55.7	5 618.7	45.2	54.8	5 860.2	46.0	54.0
Junior High	945.6	29.3	70.7	1 179.9	33.4	66.6	1 239.4	34.8	65.2
High	339.2	32.8	67.2	531.8	35.7	64.3	540.5	38.4	61.6

(F + M = 100 per cent)

Source: Statistical Yearbook of Turkey 1983, Prime Minister's Office, State Institute of Statistics, Tables 90 and 91.

Table 2

TURKEY

STUDENTS ENROLLED IN VOCATIONAL AND TECHNICAL SCHOOLS
BY SEX AND TYPE OF SCHOOL: 1974-75, 1979-80, 1981-82

Type of School	1974-75			1979-80			1981-82		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Men's Technical Training	77 823	0	100	121 690	0	100	116 968	0	100
Domestic Science	45 728	100	0	61 433	100	0	61 402	100	0
Teacher Training High Schools	58 738	47.6	52.4	17 809	31.8	68.2	15 776	32.2	67.8
Schools of Commerce and Tourism	63 166	27.8	72.2	108 797	34.7	65.3	95 480	39.1	60.9
Health and Nursing Schools	13 206	90.5	9.5	20 173	92.0	8.0	18 895	94.2	5.8
Agriculture Schools	3 599	7.1	92.9	4 874	5.6	94.4	3 049	10.2	89.8
Moslem Teacher Training Schools	48 900	0.5	99.5	178 013	9.3	90.7	216 864	13.4	86.6
Other Vocational High Schools	806	3.6	96.4	1 219	10.7	89.3	1 328	9.6	90.4

(F + M = 100 per cent)

Source: Statistical Yearbook of Turkey 1983, Tables 92-98.

Table 3

TURKEY

STUDENTS ENROLLED IN HIGHER EDUCATION INSTITUTIONS
BY SEX AND FIELD OF STUDY: 1974-75, 1979-80, 1981-82

Field of Study	1974-75			1979-80			1981-82		
	No. of Students	F (%)	M	No. of Students	F (%)	M	No. of Students	F (%)	M
Humanities	10 790	27.6	72.4	15 123	23.5	76.5	16 675	26.9	73.1
Educational Sciences	30 153	36.0	64.0	55 075	29.8	70.2	35 199	35.0	65.0
Fine Arts	2 620	41.1	58.9	4 800	42.9	57.1	4 686	42.3	57.7
Law	13 891	17.1	82.9	12 658	18.4	81.6	12 233	21.4	78.6
Positive and Natural Sciences	11 780	28.2	71.8	17 012	35.3	64.7	13 314	39.0	61.0
Social Sciences	62 240	19.6	80.4	70 461	24.7	75.3	69 814	26.8	73.2
Engineering	55 922	9.3	90.7	60 961	13.4	86.6	58 501	18.1	81.9
Medical Sciences	24 884	33.5	66.5	26 477	35.8	64.2	27 181	36.0	64.0
Agriculture	4 966	12.0	88.0	7 310	17.8	82.2	1 722	12.4	87.6
Other	-	-	-	-	-	-	1 355	24.1	75.9
Total	217 246	21.6	78.4	269 877	24.7	75.3	240 680	27.5	72.5

(F + M = 100 per cent)

Source: Statistical Yearbook of Turkey 1983, Table 102.

Table 1

UNITED KINGDOM

FULL-TIME AND PART-TIME PUPILS IN SCHOOL (1) AS A PERCENTAGE (2) OF THE POPULATION COHORT BY SEX AND AGE: 1965-66, 1970-71, 1975-76, 1979-80, 1982-83

		Age				
Year		14	15	16	17	18+
1965-66(3)	F	99.8	60.9	26.7	13.2	3.7
	M	99.5	61.0	28.7	16.2	6.4
1970-71(3)	F	100.0	70.3	35.0	19.3	5.6
	M	100.0	70.9	36.3	21.3	8.2
1975-76(3)	F	100.0	100.0	50.6	20.5	5.9
	M	99.7	99.5	50.5	21.0	7.5
1979-80(3)	F	100.0	99.6	50.9	21.2	6.4
	M	100.0	99.4	48.5	20.5	7.3
1979-80(4)	F	100.0	100.0	29.4	17.1	1.8
	M	100.0	99.8	26.7	17.3	2.5
1982-83(4)	F	100.0	98.5	35.2	19.9	2.5
	M	100.0	98.2	31.4	19.1	3.2

1. Not further or higher education

2. All percentages marginally over 100 in original tables are rounded to 100 per cent

3. Age on 31st December

4. Age on 31st August

Source: Education Statistics for the United Kingdom, HMSO, 1982 and 1984 Editions.

Table 2

UNITED KINGDOM

PUPILS LEAVING SECONDARY SCHOOL BY SEX (1) AND HIGHEST QUALIFICATIONS OBTAINED: 1965-66, 1970-71, 1975-76, 1980-81, 1982-83

Highest Qualifications Obtained	1965-66			1970-71			1975-76			1980-81(2)			1982-83(2)		
	No. of Leavers (000's)	F (%)	M (%)	No. of Leavers (000's)	F (%)	M (%)	No. of Leavers (000's)	F (%)	M (%)	No. of Leavers (000's)	F (%)	M (%)	No. of Leavers (000's)	F (%)	M (%)
GCE 'A' level or Scottish 'H' Grades															
2 or more 'A's 3 or more 'H's	79	40.5	59.5	99	44.4	55.6	109	45.0	55.0	122	46.7	53.3	131	48.1	51.9
1 'A'/1 or 2 'H's	23	47.8	52.2	29	48.3	51.7	31	51.6	48.4	32	53.1	46.9	37	54.1	45.9
GCE 'O' level/CSE/ Scottish 'O' alone															
5 or more A-C awards/ CSE grade 1(3)	57	54.4	45.6	55	54.5	45.5	68	55.9	44.1	81	54.3	45.7	91	53.8	46.2
1 to 4 A-C awards/ CSE grade 1(3)	110	50.9	49.1	127	50.4	49.6	209	51.7	48.3	228	52.6	47.4	244	52.5	47.5
No higher grades															
1 or more other grades	455	48.8	51.2	406 (4)	48.3	51.7	406	46.8	53.2	284	47.5	52.5	293	47.1	52.9
No GCE/ SCE or CSE qualification										119	42.9	57.1	105	41.9	58.1
Total School Leavers	725	48.6	51.4	717	48.7	51.3	823	48.6	51.4	865	48.9	51.5	902	49.0	51.0

(F + M = 100 per cent)

Note: GCE = General Certificate of Education. It can be either 'A' level = Advanced level or 'O' level = Ordinary level. Scottish Certificate of Education can be either 'H' grade = Higher level or 'O' grade = Ordinary level. CSE = Certificate of Secondary Education. A grade 1 at CSE (the highest grade) can be counted as equivalent to a pass at GCE or SCE 'O' level.

1. Percentages based upon the rounded absolute numbers.
2. Great Britain only.
3. A CSE grade 1 pass is counted as equivalent to a GCE or SCE 'O'level A-C pass.
4. CSE grades 2-5 in England and Wales.

Source: Education Statistics for the United Kingdom, HMSO, 1984, Table 29.

Table 3

UNITED KINGDOM (ENGLAND)

PUPILS ON A-LEVEL COURSES IN PUBLICLY-MAINTAINED SCHOOLS (1)
BY SEX AND SUBJECT AREA: 1975, 1980, 1984 (JANUARY)
(Percentages)

	1975	1980	1984
Female			
Number on A-level courses(000's)	94.7	115.7	126.8
Subject(percentage):			
- Maths/Science only	13.8	16.2	17.7
- Maths/Science and other subjects	22.3	27.0	28.4
- Other subjects only	63.9	56.8	53.4
Total	100	100	100
Courses including A-level maths(2)	16.2	21.5	24.8
Male			
Number on A-level courses	103.4	117.4	125.7
Subject(percentage):			
- Maths/Science only	39.3	41.6	41.4
- Maths/Science and other subjects	26.0	29.6	30.7
- Other subjects only	34.7	28.8	27.9
Total	100	100	100
Courses including A-level maths(2)	43.8	51.7	52.5
Female and Male			
Number on A-level courses	198.1	233.1	252.4
Subject(percentage):			
- Maths/science only	27.1	29.0	29.5
- Maths/science and other subjects	24.2	28.3	29.6
- Other subjects only	48.6	42.7	41.0
Total	100	100	100
Courses including A-level maths(2)	30.6	36.7	38.6

1. Excluding middle deemed secondary schools.
2. Including a small number of pupils on courses beyond A-levels.

Source: Statistics of Schools in England -- January 1984, Department of Education and Science Statistical Bulletin 4/85, February 1985.

Table 4

UNITED KINGDOM

STUDENTS TAKING NON-ADVANCED COURSES IN FURTHER EDUCATION BY SEX, MODE OF STUDY AND TYPE OF QUALIFICATION: 1977 AND 1982 (AUTUMN)

Type of Qualification Corresponding to Courses	1977						1982					
	Full-time/Sandwich			Part-time/Evening			Full-time/Sandwich			Part-time/Evening		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
Ordinary National Diploma	19.8	22.2	77.8	-	-	-	6.0	16.7	83.3	-	-	-
Ordinary National Certificate	1.3	2.0	98.0	24.5	16.1	83.9	(0.1)	(0)	(100)	(0.3)	(66.6)	(33.4)
Technical Educational Council Diploma(1)	3.5	5.0	95.0	27.7	3.4	96.6	48.4	28.1	71.9	98.1	6.6	93.4
Business Education Council Diploma(2)	21.6	65.1	34.9	57.9	50.5	49.5	34.7	65.4	34.6	37.7	56.2	43.8
City and Guilds	54.9	37.7	62.3	392.1	12.5	87.5	70.9	50.8	49.2	266.4	17.6	82.4
GCE (O and A levels)(3) and CSE	89.7	49.4	50.6	200.3	56.9	43.1	102.6	55.4	44.6	241.6	58.5	41.5
Other Specified Courses	63.3	68.2	31.8	72.6	43.7	56.3	84.6	77.0	33.0	127.9	67.0	33.0
Total	254.2	49.9	50.1	775.1	29.5	70.5	350.0(4)	55.9	44.1	772.6(4)	39.1	60.9

(F + M = 100 per cent)

1. Including Scottish Technical Education Council Diploma.
2. Including Scottish Business Education Council diploma.
3. General Certificate of Education (Ordinary level and Advanced level). Includes Scottish Certificate of Education.
4. Includes TEC/BEC Joint Award Certificate/Diploma.

Source: Education Statistics for the United Kingdom, 1978 Edition, Table 19; 1984 Edition, Table 24.

Table 5

UNITED KINGDOM

STUDENTS ENROLLED IN HIGHER EDUCATION (1)
BY SEX, LEVEL AND FIELD OF STUDY: 1982-83

Field of Study	Postgraduate Level			Undergraduate Level			Other Higher Education (2)		
	No. of Students (000's)	F (%)	M (%)	No. of Students (000's)	F (%)	M (%)	No. of Students (000's)	F (%)	M (%)
Education	22.4	50.0	50.0	34.2	72.8	65.8	17.6	56.8	43.2
Medicine, Dentistry, Health	6.9	37.7	62.3	33.8	48.5	51.5	13.3	69.9	30.1
Engineering and Technology	11.9	7.6	92.4	62.5	7.2	92.8	83.3	3.4	96.6
Agriculture, Forestry and Veterinary Science	1.5	26.7	73.3	5.4	37.0	63.0	2.1	23.8	76.2
Science	16.8	22.6	77.4	86.2	33.4	66.6	20.8	30.8	69.2
Social, Administrative and Business Studies	25.6	30.1	69.9	107.6	43.6	56.4	91.0	37.6	62.4
Architecture, other Professional Subjects	4.7	31.9	68.1	14.9	40.9	59.1	12.2	43.4	56.6
Language, Literature, area Studies	5.2	48.1	51.9	40.4	69.6	30.4	2.6	76.9	23.1
Arts, except Languages	4.1	29.3	70.7	30.7	56.4	43.6	1.7	58.8	41.2
Music, Drama, Art and Design	2.7	48.1	51.9	31.5	60.3	39.7	6.7	55.2	44.8
Other	-	-	-	(0.2)	(100)	(0)	(0.1)	(100)	(0)
All Subjects	101.8	32.4	67.6	447.7	43.4	56.6	251.4	29.9	70.1

(F + M = 100 per cent)

1. Excludes the Open University.

2. Includes advanced level further education.

Source: Education Statistics for the United Kingdom, 1984 Edition, Table 26.

Table 1

UNITED STATES

PERCENTAGE OF THE POPULATION AGED 3 TO 34 ENROLLED IN SCHOOL (1) BY SEX AND AGE: 1965, 1970, 1975, 1980, 1981

a) Percentages

Age	1965		1970		1975		1980		1981	
	F	M	F	M	F	M	F	M	F	M
3 and 4 yrs	10.9	10.2	19.8	21.2	32.1	30.9	35.5	37.8	35.2	36.8
5 and 6 yrs	84.9	84.9	90.2	88.9	95.1	94.4	96.4	95.0	93.8	94.2
7 to 13 yrs	99.4	99.3	99.4	99.0	99.6	99.0	99.3	99.2	99.4	99.1
14 to 17 yrs	92.8	93.6	93.4	94.8	92.6	94.6	93.1	93.9	93.9	94.3
18 and 19 yrs	37.7	55.6	41.6	54.4	44.2	49.9	45.8	47.0	47.5	50.5
20 and 21 yrs	19.5	37.6	23.6	42.7	27.4	35.3	29.5	32.6	31.2	32.1
22 to 24 yrs	6.5	21.1	9.4	21.2	12.6	20.0	14.9	17.8	13.9	19.2
25 to 29 yrs	3.1	9.4	4.3	11.0	7.2	13.1	8.8	9.8	8.4	9.6
30 to 34 yrs	2.1	4.5	3.1	5.3	5.6	7.7	7.0	5.9	7.5	6.2

b) Differences between Male and Female (Male Percentage minus Female Percentage)

Age	1965	1970	1975	1980	1981
3 and 4 yrs	-0.7	+1.4	0	+2.3	+1.6
5 and 6 yrs	-0.7	-1.3	-0.5	-1.4	+0.4
7 to 13 yrs	-0.4	-0.4	-0.2	-0.1	-0.3
14 to 17 yrs	+1.6	+1.4	+1.4	+0.6	+0.4
18 and 19 yrs	+19.1	+12.8	+9.4	+1.2	+3.0
20 and 21 yrs	+23.5	+19.1	+11.0	+3.1	+0.9
22 to 24 yrs	+12.2	+11.8	+12.4	+2.9	+5.3
25 to 29 yrs	+7.4	+6.7	+6.8	+1.0	+1.2
30 to 34 yrs	+2.1	+2.2	+2.2	-1.1	-1.3

1. School: Any graded public, parochial or private school in the regular school, further, higher and professional school systems where attendance may be either during the day or night, full-time or part-time. 'Special' schools, trade or business colleges excluded.

Note: Based on sample surveys of non-institutionalised populations. Rates refer to October enrolments.

Source: Digest of Education Statistics, 1983-84, National Center for Education Statistics, Washington D.C. Table 5, p.10.

Table 2

UNITED STATES

HIGH SCHOOL SENIORS IN ACADEMIC, GENERAL AND VOCATIONAL CURRICULA BY SEX: 1972 AND 1980 (Percentages)

Curriculum Placement	1972			1980		
	F	M	All	F	M	All
Academic	40	45	43	38	39	39
General	31	35	33	36	38	37
Vocational	29	20	24	26	23	24
Total	100	100	100	100	100	100

Source: High School and Beyond: A Capsule Description of High School Students. National Center for Education Statistics, Washington D.C., 1981, Table 2.

Table 3

UNITED STATES

ENROLMENT IN TWO-YEAR HIGHER EDUCATION INSTITUTIONS BY SEX: 1963-81 (1)

Year	Total No. of Students	F (%)	M
1963	844 512	36.9	63.1
1964	988 926	37.4	62.6
1965	1 172 952	37.5	62.5
1966	1 325 970	39.0	61.0
1967	1 512 762	39.5	60.5
1968	1 792 296	39.2	60.8
1969	1 976 658	39.8	60.2
1970	2 223 208	40.8	59.2
1971	2 485 911	41.7	58.3
1972	2 756 186	44.0	56.0
1973	3 010 049	45.2	54.8
1974	3 403 994	46.2	53.8
1975	3 970 119	45.5	54.5
1976	3 883 321	49.0	51.0
1977	4 042 942	51.4	48.6
1978	4 028 141	53.2	46.8
1979	4 216 666	54.5	45.6
1980	4 516 287	54.8	45.2
1981	4 716 211	55.0	45.0

(F + M = 100 per cent)

1. Enrolments taken in the fall of each year.
Note: As from 1972, 2-year branches in universities and other long-cycle institutions included.

Source: Digest of Education Statistics, 1983-84, op.cit. Table 89.

Table 4

UNITED STATES

BACHELOR DEGREES AWARDED BY SEX AND DISCIPLINE: 1971 AND 1981

Discipline	1971			1981			Change for Women (1) (%)
	Total No. of Degrees	F (%)	M	Total No. of Degrees	F (%)	M	
Home Economics	11 271	97.3	2.7	18 370	95.0	5.0	-2.3
Library Science	1 013	92.0	8.0	375	94.1	5.9	+2.1
Health Professions	25 484	77.2	22.8	63 649	83.5	16.5	+6.3
Foreign Languages	20 433	74.8	25.2	10 319	75.6	24.4	+0.8
Education	177 638	74.4	25.6	108 265	75.0	25.0	+0.6
Letters	73 398	61.0	39.0	40 028	59.8	40.2	-1.2
Fine and Applied Arts	30 447	59.7	40.3	40 479	63.4	36.6	+3.7
Area Studies	2 497	52.9	47.1	2 585	60.1	39.9	+7.2
Public Affairs and Service	9 303	49.1	50.9	36 311	58.0	42.0	+8.9
Psychology	38 154	44.7	55.3	40 833	65.0	35.0	+20.3
Mathematics	24 918	38.1	61.9	11 078	42.8	57.2	+4.7
Social Sciences	156 698	37.0	63.0	100 647	44.2	55.8	+7.2
Communications	10 802	35.3	64.7	31 282	54.7	45.3	+19.4
Biological Sciences	36 033	29.3	70.7	43 216	44.1	55.9	+14.8
Interdisciplinary Studies	14 084	29.2	70.8	34 491	51.0	49.0	+21.8
Theology	3 744	27.2	72.8	5 841	25.4	74.6	-1.8
Physical Sciences	21 549	14.0	86.0	23 952	24.6	75.4	+10.6
Computer and Information Science	2 388	13.6	86.4	15 121	32.5	67.5	+18.9
Architecture and Environmental Design	5 578	12.0	88.0	9 455	28.1	71.9	+16.1
Business & Management	116 709	9.3	90.7	200 876	36.7	63.3	+27.4
Law	545	5.0	95.0	776	50.0	50.0	+45.0
Agriculture and Natural Resources	12 710	4.2	95.8	21 886	30.8	69.2	+26.6
Engineering	50 357	0.8	99.2	75 000	10.3	89.7	+9.5
Military Science	357	0.3	99.7	305	3.9	96.1	+3.6
Total	846 110	43.4	56.6	935 140	49.8	50.2	+6.4

(F + M = 100 per cent)

1. 1981 percentage minus 1971 percentage.

Note: Disciplines ordered according to the proportion of women among 1971 degree recipients.

Sources: Degree Awards to Women: 1979 Update, National Center for Education Statistics, Washington, D.C., Table 1, p.4; Digest of Education Statistics, 1983-84, op.cit., Table 100.

Table 5

UNITED STATES

MASTERS DEGREES AWARDED BY SEX AND DISCIPLINE: 1971 AND 1981

Discipline	1971 Total No. of Degrees	1971 F (%)	1971 M (%)	1981 Total No. of Degrees	1981 F (%)	1981 M (%)	Change for Women (1) (%)
Home Economics	1 453	93.9	6.1	2 570	91.2	9.8	-2.7
Library Science	7 028	81.3	18.7	4 859	82.7	17.8	+1.4
Foreign Languages	4 779	65.4	34.6	2 104	67.0	33.0	+1.6
Letters	12 743	57.5	42.5	8 301	61.6	38.9	+3.6
Health Professions	5 902	55.4	44.6	16 515	73.9	26.1	+18.5
Education	89 067	52.2	47.8	98 381	71.5	28.5	+19.3
Public Affairs and Service	8 406	48.8	51.2	20 074	55.4	44.6	+6.6
Fine and Applied Arts	6 678	47.4	52.6	8 629	53.0	47.0	+5.6
Area Studies	1 017	39.0	61.0	742	51.6	48.4	+12.6
Psychology	4 438	37.2	62.8	7 988	58.0	42.0	+20.8
Interdisciplinary Studies	1 706	35.6	64.4	4 519	39.8	60.2	+4.2
Communications	1 856	34.6	65.4	3 105	53.4	46.6	+18.8
Biological Sciences	5 756	33.8	66.2	5 978	38.9	61.1	+5.1
Mathematics	5 201	29.3	70.7	2 567	34.1	65.9	+4.8
Social Sciences	16 522	28.3	71.7	11 917	37.9	62.4	+9.3
Theology	2 710	24.4	75.6	4 220	33.6	66.4	+9.2
Architecture and Environmental Design	1 724	14.1	85.9	3 153	29.1	70.9	+15.0
Physical Sciences	6 386	13.4	86.6	5 284	20.5	79.5	+7.1
Computer and Information Science	1 588	10.3	89.7	4 218	23.0	77.0	+12.7
Agriculture and Natural Resources	2 4589	5.9	94.1	4 003	23.5	76.5	+17.6
Law	955	4.8	95.2	1 832	17.8	82.2	+13.0
Business and Management	26 654	3.9	96.1	58 018	25.0	75.0	+21.1
Engineering	16 547	1.1	98.9	16 709	8.2	91.8	+7.1
Military Science	2	0	100.0	43	0	100	0
Total	231 486	40.1	59.9	295 739	50.3	49.7	+10.2

(F + M = 100 per cent)

1. 1981 percentage minus 1971 percentage.

Note: Disciplines ordered according to the proportion of women among 1971 degree recipients.

Sources: Degree Awards to Women: 1979 Update, op.cit., p.10 Table 3; Digest of Education Statistics 1983-84, op.cit., Table 100.

Table 6

UNITED STATES

DOCTORAL DEGREES AWARDED BY SEX AND DISCIPLINE: 1971 AND 1981

Discipline	1971			1981			Change for Women (1) (%)
	Total No. of Degrees	F (%)	M (%)	Total No. of Degrees	F (%)	M (%)	
Home Economics	123	61.0	39.0	247	68.4	31.6	+7.4
Foreign Languages	781	38.0	62.0	588	53.4	46.6	+15.4
Library Science	39	28.2	71.8	41	56.3	43.7	+28.1
Public Affairs and Service	178	24.2	75.8	433	40.0	60.0	+15.8
Psychology	1 782	24.0	76.0	2 955	43.1	56.9	+19.1
Letters	2 416	23.5	76.5	1 790	43.6	56.4	+20.1
Fine and Applied Arts	621	22.2	77.8	654	39.6	60.4	+17.4
Education	6 398	21.2	78.8	7 900	47.3	52.7	+26.1
Area Studies	149	17.4	82.6	157	36.3	63.7	+18.9
Health Professions	466	16.5	83.5	842	43.6	56.4	+27.1
Biological Sciences	3 645	16.3	83.7	3 718	28.3	71.7	+12.0
Interdisciplinary Studies	91	15.4	84.6	279	39.1	60.9	+23.7
Social Sciences	3 659	13.9	86.1	3 119	27.2	72.8	+13.3
Communications	145	13.1	86.9	182	41.2	58.8	+28.1
Architecture and Environmental Design	36	8.3	91.7	93	21.5	78.5	+13.2
Mathematics	1 199	7.8	92.2	728	15.7	84.3	+7.9
Physical Sciences	4 391	5.6	94.4	3 141	12.0	88.0	+6.4
Agriculture and Natural Resources	1 086	2.9	97.1	1 067	11.9	88.1	+9.0
Business and Management	810	2.8	97.2	845	14.8	85.2	+12.0
Computer and Information Service	128	2.3	97.7	252	9.9	90.1	+7.6
Theology	312	1.9	98.1	1 276	7.9	92.1	+6.0
Engineering	3 638	0.6	99.4	2 561	4.1	95.9	+3.5
Law	20	0	100.0	60	6.7	93.3	+6.7
Total	32 113	14.3	85.7	32 958	31.1	68.9	+16.8

(F + M = 100 per cent)

1. 1981 percentage minus 1971 percentage.

Note: Disciplines ordered according to the proportion of women among 1971 degree recipients.

Source: Digest of Education Statistics 1983-84, op.cit., Table 100.

Table 7

UNITED STATES

FIRST PROFESSIONAL DEGREES AWARDED BY SEX AND FIELD OF STUDY: 1971 AND 1981

Field of Study	1971			1981			Change for Women (1) (%)
	Total No. of Degrees	F (%)	M	Total No. of Degrees	F (%)	M	
Medicine (MD)	8 986	9.2	90.8	15 505	24.7	75.3	+15.5
Veterinary Medicine (DVM)	1 252	7.8	92.2	1 922	35.2	64.8	+27.4
Law, general (LLD or JD)	17 652	7.3	92.7	36 331	32.4	67.6	+25.1
Optometry (OD)	531	2.4	97.6	1 097	18.9	81.1	+16.5
Theological professions, general	5 055	2.3	97.7	6 898	13.9	86.1	+11.6
Osteopathic Medicine (DO)	472	2.3	97.7	1 145	16.4	83.6	+14.1
Podiatric Medicine (Pod.D.)	240	2.1	97.9	597	11.6	88.4	+9.5
Dentistry (DDS or DMD)	3 777	1.2	98.8	5 460	14.4	85.6	+13.2
Chiropractic (DC)	.	.	.	2 337	16.6	83.4	-
Pharmacy (D Pharm)	.	.	.	664	42.6	57.4	-
Other	311	21.2	78.8	-	-	-	-
Total	38 276	6.5	93.5	71 956	26.6	73.4	+20.1

(F + M = 100 per cent)

1. 1981 percentage minus 1971 percentage.

Sources: Degree Awards to Women: 1979 Update, op.cit., Table 7, p. 20; Digest of Education Statistics, op.cit., Table 105.

Table 1

YUGOSLAVIA

PRIMARY AND SECONDARY SCHOOLING BY SEX AND TYPE OF SCHOOL: 1979-80

Type of School	No. of Pupils (000's)	F (%)	M
Regular Primary Education	2 818.5	47.9	52.1
Regular Secondary Education	984.5	46.3	53.7
Reformed programmes	545.5	46.8	53.2
of which:			
1st level	341.2	46.4	53.6
2nd level	204.3	47.4	52.6
Non-reformed programmes	439.0	45.6	54.4
Schools for Qualified Workers	144.0	27.7	72.3
Technical and Other Professional Schools	160.7	55.6	44.4

(F + M = 100 per cent)

Source: Statisticki Godisnjak Jugoslavije, 1981, Table 223-1.

Table 2

YUGOSLAVIA

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX AND MODE OF STUDY: 1976-77, 1978-79, 1980-81

Mode of Study	1976-77			1978-79			1980-81		
	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M	No. of Students (000's)	F (%)	M
All Students									
Full-time students	256.4	41.5	58.5	285.4	41.5	58.5	262.5	49.0	51.0
All students	405.7	39.6	60.4	439.7	39.5	60.5	411.2	45.4	54.6
Post-Graduate Students									
Specialists and Masters of Science	-	-	-	1 937(1)	25.6	74.4	2 136(1)	29.3	70.7
Doctors of Science	-	-	-	772(1)	18.5	81.5	861(1)	21.0	79.0

(F + M = 100 per cent)

1. Total numbers completing their studies at this level.

Source: Statisticki Godisnjak Jugoslavije 1981, Tables 126-14 and 126-20.

Table 3

YUGOSLAVIA

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX, MODE OF STUDY, TYPE OF INSTITUTION AND LINE OF STUDY: 1980-81

Type of Institution and Line of Study	All Students			Full-time Students		
	No. of Students	F (%)	M (%)	No. of Students	F (%)	M (%)
Faculties: Total	229 724	46.2	53.8	209 737	49.1	50.9
Natural Science -- Maths	11 248	53.7	46.3	8 876	55.9	44.1
Natural Science -- Maths and Chemical Technology	1 673	59.7	40.3	1 511	62.8	37.2
Mathematics	213	57.3	42.7	133	72.2	27.8
Physics	115	50.4	49.6	94	56.4	43.6
Chemistry	579	63.7	36.3	495	65.1	34.9
Biology	273	73.6	26.4	231	74.9	25.1
Geography	337	24.9	75.1	208	22.1	77.9
Engineering	66 251	21.4	78.6	53 298	23.8	76.2
Medicine	19 147	59.1	40.9	19 142	59.1	40.9
Dentistry	3 693	56.8	43.2	3 577	57.3	42.7
Pharmacy	2 644	85.6	14.4	2 569	85.6	14.4
Agriculture	9 314	32.6	67.4	7 876	35.3	64.7
Forestry	2 707	30.3	69.7	2 473	31.1	68.9
Veterinary Science	2 121	39.8	60.2	2 121	39.8	60.2
Biological Engineering	1 528	51.0	49.0	1 427	53.5	46.5
Economics	57 904	52.0	48.0	31 355	60.7	39.3
Foreign Trade	2 418	60.9	39.1	1 757	65.7	34.3
Tourism and Foreign Trade	65[illegible]	55.6	44.4	443	57.8	42.2
Hotel Management	583	55.4	44.6	273	64.5	35.5
Tourism and Catering	561	34.9	65.1	304	41.8	58.2
Law	57 414	53.9	46.1	30 455	59.5	40.5
Interdisciplinary Study for Social Work	367	89.1	10.9	291	90.7	9.3
Political Science	8 039	43.5	56.5	5 285	50.0	50.0
Organisational Science	2 643	24.7	75.3	1 251	33.3	66.7
Organisation and Computer Science	1 743	47.8	52.2	618	55.5	44.5
Arts and Philosophy	28 737	58.4	41.6	22 397	60.8	39.2
Philology	5 194	77.0	23.0	3 603	81.1	18.9
Teacher Training	4 314	63.1	36.9	2 903	66.2	33.8
Journalism	421	47.3	52.7	290	52.4	47.6
Teaching of Handicapped Children	2 550	77.1	22.9	1 526	83.5	16.5
Physical Education	3 178	16.5	83.5	2 258	20.5	79.5
National Defence	1 158	14.2	85.8	697	22.5	77.5

Table 3 (Continued)

YUGOSLAVIA

STUDENTS ENROLLED IN HIGHER EDUCATION BY SEX, MODE OF STUDY, TYPE OF INSTITUTION AND LINE OF STUDY: 1980-81

Type of Institution and Line of Study	All Students			Full-time Students		
	No. of Students	F (%)	M	No. of Students	F (%)	M
Art Academics & Faculties: Total	3 463	44.0	56.0	3 192	44.6	55.4
Fine Arts	980	33.6	66.4	976	33.7	66.3
Applied Arts	292	47.6	52.4	292	47.6	52.4
Music	1 562	53.7	46.3	1 393	55.1	44.9
Theatre, Film, Radio, TV	626	34.3	65.7	531	35.8	64.2
Higher Schools: Total	6 643	37.9	62.1	3 285	42.9	57.1
Engineering	1 870	20.2	79.8	1 291	23.5	76.5
Economics and Commerce	2 969	55.0	45.0	1 354	63.8	36.2
Labour Organisation	1 379	26.8	73.2	317	36.6	63.4
Physical Education	425	33.2	66.8	323	39.0	51.0
Higher Schools (short cycle): Total	101 345	43.9	56.1	46 320	49.5	50.5
Engineering	18 485	19.4	80.6	8 715	26.6	73.4
Transport	3 459	14.6	85.4	1 856	15.1	84.9
Medical Studies	3 864	85.7	14.3	2 000	82.5	17.5
Agriculture	1 454	26.1	73.9	686	37.2	62.8
Economics	23 277	52.2	47.8	6 999	64.4	35.6
Law and Administration	4 886	57.5	42.5	1 585	64.7	35.3
Teaching	26 459	60.5	39.5	15 804	65.0	35.0
Social Work	4 052	69.8	30.2	1 092	82.8	17.2
Training for Interior Personnel	1 705	6.9	93.1	599	11.5	88.5
Labour Organisation	1 995	21.9	78.1	324	48.8	51.2
Education of Workers	11 709	19.9	80.1	6 660	22.1	77.9

(F + M = 100 per cent)

Source: Statisticki Godisnjak Jugoslavije 1981, Table 126-14.

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